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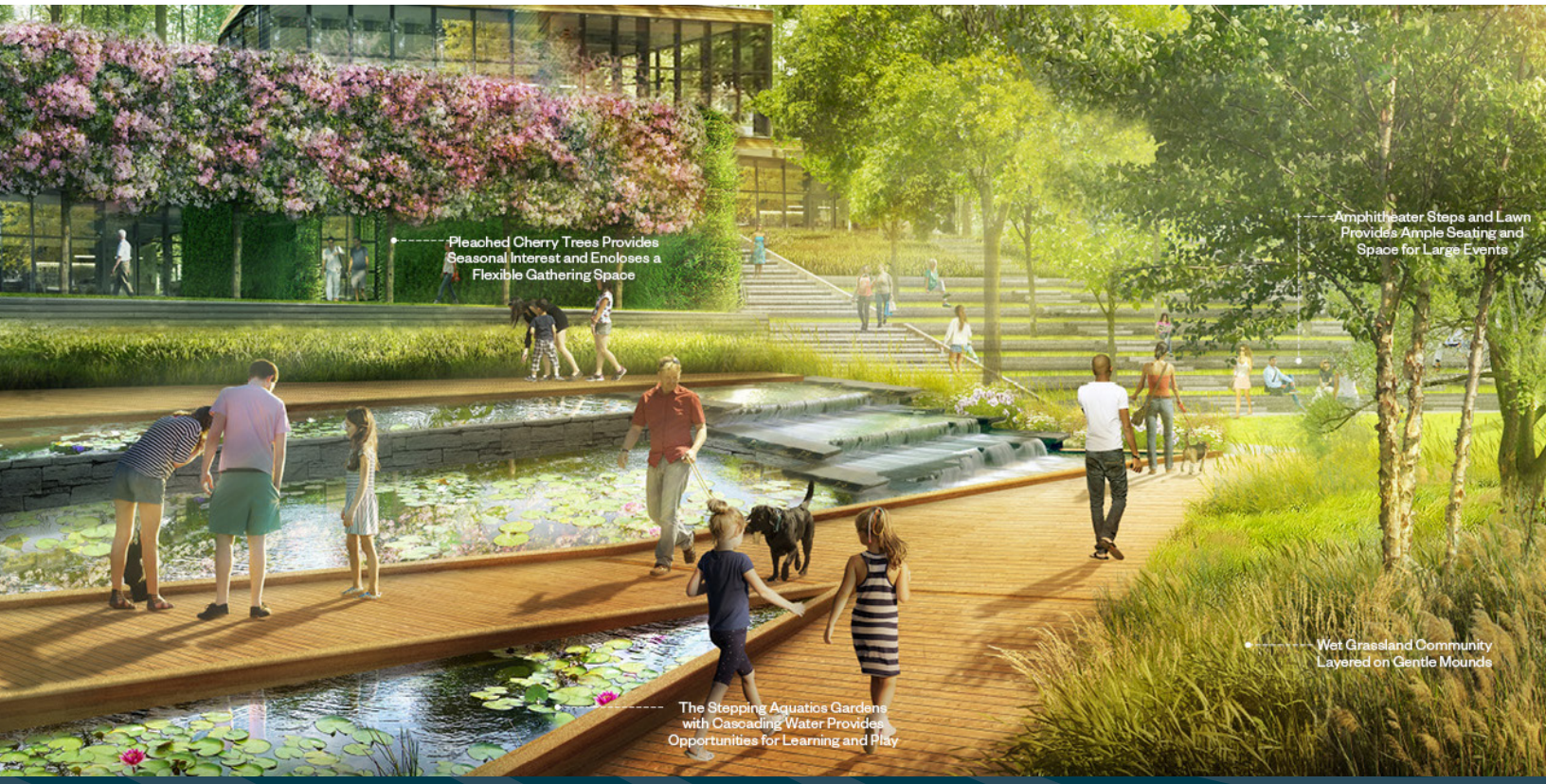

Justification for Continued Licensure of Landscape Architects in Virginia

September 29, 2020

REVISED 01.14.2021

Image above:
2019 ASLA Professional Analysis and Planning Honor Award.
McIntire Botanical Garden: Masterplan for Resiliency and Healing.
Mikyoung Kim Design (Image credit: Mikyoung Kim Design)

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Executive Summary

Since initial regulation in 1980, landscape architects in Virginia have played an ever-increasing role in the protection of public health, safety, and welfare. Virginians and visitors alike benefit immensely from the work of landscape architects. Landscape architect-designed spaces such as the Blue Ridge Parkway and Shenandoah National Park's Skyline Drive, Richmond's Canal Walk and the recently completed Low Line, Dulles International Airport, the restoration of Colonial Williamsburg, Reston Town Center, Charlottesville's Downtown Pedestrian Mall, and the Virginia State Capitol's renovated grounds and underground entrance are used by, and impact, millions of users and visitors each year. Virginians expect that these and other designed spaces are safe and well-designed—regardless of whether or not the public is aware of the role landscape architects play in designing, enhancing, and protecting the public realm.

Landscape architects are both leaders and essential members of design teams. They are at the forefront of addressing critical contemporary issues such as increased urbanization, remediation of post-industrial sites, protection of water quality, addressing sea-level rise and storm surge through living shorelines, marsh restorations, and dune enhancements, efficient transportation solutions, healthy communities, wildfire-adapted design, crime prevention through environmental design, antiterrorism and force protection design, and appropriate management of our cultural and natural heritage—all of which impact the health, safety, and welfare of Virginia's citizens.

> "The most important profession fighting sea-level rise you never heard of"
> - *Virginia Mercury*[1]

Since initial regulation over forty years ago, the public has also increased expectations that the health of the environment will be protected through the involvement of specially trained professionals in the management, planning, design, construction, and rehabilitation of public and private lands. Landscape architects are uniquely educated and trained to provide the essential environmental design services that the public has come to rely on—there is no other profession that can match the education and areas of expertise that landscape architects possess. And as such, landscape architects are essential to the land development and land stewardship processes.

This white paper also illustrates how the practice of landscape architecture is rooted in the Science, Technology, Engineering, and Mathematics (STEM) disciplines. Landscape architects plan and design all of the spaces outside buildings and structures, as well as spaces on rooftops and over structures, including community master plans, multimodal transportation networks, transit-oriented development, park and outdoor recreation spaces, water and stormwater management infrastructure, streetscapes, and more. Furthermore, as the impacts of climate change intensify, efforts to conserve water, protect food sources, prevent surface water and groundwater pollution, mitigate storm surge flooding and sea-level rise, protect against and manage wildfires, and, more recently, design outdoor facilities in response to pandemics, are all expected to persist.

Elements of the scope of practice of landscape architects, though distinct from other design professions, do overlap at times with other professions involved in the design of sites, including architects and civil engineers. Despite the erroneous assertions that the practice of landscape architecture overlaps substantially with the work of landscape designers, the facts speak the truth:

Landscape designers in Virginia:

- Typically focus on planting and hardscape design for small-scale sites and residential landscapes.
- Landscape designers do not serve as the prime design professional responsible for coordinating the work of architects, engineers, land surveyors, geotechnical engineers, scientists, and other professionals required to complete fully coordinated designs for governmental, commercial, institutional, industrial, recreational, transportation, and similarly complex site design projects in the public realm.

[1] https://www.virginiamercury.com/2019/10/02/the-most-important-profession-fighting-sea-level-rise-youve-never-heard-of/

In contrast, landscape architects in Virginia, as defined in the scope of practice of landscape architecture in the Code of Virginia:

- Undertake site design for governmental, institutional, commercial, industrial, recreational, streetscape, and open space projects of all scales including the siting of buildings and structures, designing roads and parking lots and bicycle and pedestrian circulation systems, as well as the design of grading and drainage including storm water management systems and erosion control measures.
- Serve as the prime design professional responsible for the coordination of a team of architects, engineers, land surveyors, geotechnical engineers, scientists, and other professionals required to complete a fully coordinated complex site designs.

Deregulation or voluntary certification will jeopardize the health, safety, and welfare of residents and visitors to the Commonwealth

Landscape architecture involves substantial protection of public health, safety, and welfare and currently 52 jurisdictions regulate landscape architects.

- Forty-seven states, the District of Columbia, Puerto Rico, and the Commonwealth of the Northern Mariana Islands license landscape architects and regulate practice and title; and
- Maine and Massachusetts license landscape architects and regulate title. Illinois sunset renewal legislation to reinstate licensing of landscape architects and regulate title is pending before the Illinois state legislature.[2]

Licensure of landscape architects serves to protect the public's health, safety, and welfare by requiring minimal competency for new entrants into the profession to help ensure the physical and financial well-being of clients and all users of designed sites. The requirements include:

- Completion of a pre-professional program of study at a university accredited by the Landscape Architectural Accreditation Board;
- Attainment of adequate professional experience under the supervision of a licensed landscape architect, architect, or professional engineer; and
- Passage of a series of rigorous, uniform national professional exams that are developed and administered based on best practices in professional licensure.

These standards are comparable to other licensed design professions, such as engineering and architecture, whose regulation also protects the public.

This paper also responds to the criteria identified in Virginia Code § 54.1-311, which lays out an analysis for determining the need for the appropriate degree of regulation for a profession or occupation. The analysis shows that landscape architects are highly trained design professionals who often work on complex projects in areas of great sensitivity. The profession is broad and diverse in scale and scope, encompassing the analysis, planning, design, management, and stewardship of natural and built environments through science and design. It is well documented that incompetent practice endangers the public's health, safety, and welfare as well as the environment for years or decades to come.

Deregulation or voluntary certification will discourage economic opportunity for Virginia-based businesses

While public protection is far and away the primary purpose of licensure, licensure also creates a defined pathway for professionals to become owners and principals of regulated design firms. Well-structured licensing models also provide clear, consistent requirements within a profession and make it possible for licensed professionals to move from one state to another and have their license acknowledged.

The North American regulatory framework for landscape architecture is based on a system of reciprocity, in which states that license landscape architects permit out-of-state professionals to practice based on their demonstration of attainment of the common standard of licensure consisting of professional experience, education, and examination.

[2] In December 2019, less than twenty-four hours before final passage of sunset renewal legislation to reauthorize the continued licensing of landscape architects, the Illinois state legislature abruptly adjourned for the year due to breaking news of an FBI investigation involving several state legislators. In 2020, early passage of the legislation was stalled due to COVID-19. However, final passage is expected during the fall legislative session. The Illinois Department of Financial and Professional Regulation has stated passage of the bill is a high priority.

Given that framework, if Virginia were to deregulate the profession or move to voluntary certification, Virginia-licensed landscape architects—and every new entrant to the profession from the state—will likely find themselves unable to practice outside of the state or be severely disadvantaged in doing so. This new barrier to economic and professional growth will adversely impact everyone employed by these businesses as well as those from whom they procure goods and services.

Also having a major impact on economic opportunity, if deregulated or reduced to voluntary certification, Virginia landscape architects would be prohibited from pursuing and undertaking professional design services for Federal agencies or state or local governments that require design professionals working on public projects to be licensed.

Deregulation or voluntary certification will negatively impact Virginia's top-ranked landscape architecture degree programs

For nearly half a century the Commonwealth has supported two of the top-ranked landscape architecture degree programs in the U.S.—the undergraduate and graduate programs at Virginia Tech and the graduate program at the University of Virginia. Both programs attract top candidates from Virginia, the United States, and worldwide. Continued licensing of Virginia's Landscape Architects ensures that the Commonwealth will retain and reap the benefits of future practitioners educated by the Commonwealth. By deregulating the profession or moving to voluntary certification, the University of Virginia and Virginia Tech landscape architecture programs would very likely experience reduced enrollments of U.S. students and recent graduates fleeing Virginia to gain the required experience under licensed landscape architects in other states.

In conclusion, collectively regulating landscape architecture, architecture, and engineering enhances the safety of the natural and built environments as safe places for people to live, work, play, and move about. The practice and profession of landscape architecture is a distinct, mature member of the design professions, and regulation through licensure is an essential component to protect public health, safety, and welfare.

Perhaps the past-Chief of Technical Services for the Chesapeake Bay Local Assistance Board best summed up the critical need for licensure of landscape architects in Virginia:

> "Landscape architects have as a central tenet to their design philosophies the concept of working with nature rather than against it, a concept that our culture is once again beginning to understand and support as more cost-effective and correct in the long term. This philosophy will allow for the vital balance to be achieved between the need for continued economic growth and development and the equally important necessity of protecting the resources upon which we all depend for life and health. They understand very clearly that value is not just determined by what a project costs, but more importantly by how long it remains useful and provides sustenance and enjoyment. **Developing land while adequately protecting the environment requires subtle choices based on a wide spectrum of knowledge and experience. Landscape architects are leaders among design professionals in demonstrating this ability**."

1.0 Introduction

This section provides background information, an outline of the paper contents, and highlights the organizations that assisted with the preparation and submission of this document to the Board of Professional and Occupational Regulation.

See Appendix H for additional information on contributors to this white paper.

1.1 Background and Purposes of the White Paper

Background:
In 2018, the Joint Legislative Audit and Review Commission (JLARC) submitted a report to the Governor and General Assembly of Virginia addressing the operations and performance of the Department of Professional and Occupational Regulation (DPOR). That report entitled *Report to the Governor and the General Assembly of Virginia, Operations and Performance of the Department of Professional and Occupational Regulation, Joint Legislative Audit and Review Commission (JLARC)*, 2018, included a recommendation that the Board of Professional and Occupational Regulation (BPOR)—the board that oversees DPOR—conduct a study addressing the continued need for regulating landscape architects.

Purposes:

- **Provide comprehensive information to BPOR to support the completion of the Board's study of the regulatory status of landscape architects**; and
- **Deliver a compelling justification for the continued licensure of landscape architects.**

As detailed below, this document highlights and provides information on:

- The scope of practice of landscape architects with a focus on how landscape architects protect public health, safety, and welfare;
- The differences between landscape architects and landscape designers;
- Overlapping practice between landscape architects, architects and engineers;
- A comparative analysis of data on claims made to the Board of Architects, Professional Engineers, Land Surveyors, Certified Interior Designers, and Landscape Architects (APELSCIDLA Board);
- A justification of continued licensure of landscape architects following Code of Virginia section § 54.1-311.*Degrees of regulation*;
- Landscape architectural education including information on the University of Virginia and Virginia Tech landscape architecture degree programs;
- Landscape Architect Registration Exam (LARE); and
- Project examples demonstrating the role of landscape architects in the protection of public health, safety, and welfare.

1.2 Outline of White Paper Contents

This white paper includes the following sections:

Sec. 2.0 Landscape Architects Protect Public Health, Safety, and Welfare
This section addresses how landscape architects protect public health, safety, and welfare through scope of practice, licensure, examination, and education.

Sec. 3.0 Landscape Architecture and Landscape Design—Key Differences
The JLARC report stated that there is a significant overlap between landscape architects and landscape designers. This section provides information that dispels this myth and provides comparative information regarding education, examination, experience, and scope of the professional services.

Sec. 4.0 How the Practice of Landscape Architects Overlaps with the Practice of Architects and Engineers
This section provides an overview of areas of overlapping practice between landscape architects, architects, and engineers.

Sec. 5.0 Analysis of APELSCIDLA Board Complaints Data
The JLARC report indicated that very few claims are made against landscape architects. This section provides a per capita basis comparative analysis of claims made against all professions regulated by the APELSCIDLA Board on an annual basis over the past five years.

Sec. 6.0 Determining the Need for Landscape Architecture Regulation
This section provides responses to the ten criteria established by Code of Virginia § 54.1-311 used by the Board of Professional and Occupational Regulation for determining the proper degree of regulation.

Appendix A: Scope of the Profession of Landscape Architecture
This appendix includes several information sheets covering major areas of the scope of practice of landscape architects.

Appendix B: Virginia Tech and University of Virginia Degree Requirements for First Professional Degrees in Landscape Architecture
Detailed lists of courses for the Virginia Tech and University of Virginia landscape architecture degree programs are provided in this appendix.

Appendix C: L.A.R.E. Orientation, Understanding the Landscape Architect Registration Examination
This appendix includes information provided by CLARB concerning the LARE including scope, how the exam is designed, and the knowledge, skills, and abilities (KSAs) covered by the exam with a focus on KSAs addressing protection of public health, safety, and welfare.

Appendix D: APELSCIDLA Board Data on Investigated Complaints and Regulant Populations
Data provided by the APELSCIDLA Board on Investigated Complaints and Regulant Populations and utilized in the Section 4 comparative analysis is provided in this appendix.

Appendix E: Project Examples Demonstrating the Role of Landscape Architects in Protecting Public Health, Safety, and Welfare
This appendix includes examples of complex built and planned projects that demonstrate how Virginia-licensed landscape architects protect public health, safety, and welfare.

Appendix F: Impacts of Landscape Architecture on the Public Health, Safety, and Welfare, How Licensure Protects the Public
This appendix provides a table that outlines the impact of landscape architecture on public health, safety, and welfare. The table summarizes how elements of practice can harm the public's health, safety, and welfare due to malpractice, how landscape architecture education standards address this element of practice, and how examination provides a definitive measure of competence to ensure candidates are prepared to enter the profession.

Appendix G: 2019 Landscape Architecture Library of MasterSpec
A list of construction specifications representing the range of specifications typically prepared by landscape architects.

Appendix H: Preparers and Contributors to the White Paper
Information on the contributors to this white paper are included in this appendix.

In addition to the information included in this white paper, ASLA Virginia will transmit two critically important documents under separate cover to BPOR:

Landscape Architecture Licensing Handbook: Ensuring Safe, Healthy, and Resilient Natural and Built Environments, Produced by: Josh Sundloff, JD, ASLA. Produced for: The American Society of Landscape Architects. Original Creator and Contributor: Alex P. Schatz, JD, January 2017.

The first paragraph of the Executive Summary states:

> "The purpose of this document is to educate and describe the importance and necessity of landscape architecture licensure through findings of empirical evidence of harm caused by incompetent landscape architectural work, which includes everything from the nuisance of repeated minor injuries all the way up to such things as permanent injury and death. In pursuit of that purpose, this document explains the justifications and reasons why landscape architecture is a licensed profession in all 50 states. This document also particularly illustrates the profession's direct impact on the health, safety, and welfare of the public. Numerous past reviews of the subject have found that regulation of the profession of landscape architecture is indeed necessary to protect the public from both physical and monetary harm—irreparable harm in some cases. Other reviews of the profession have highlighted the need for a comprehensive presentation of the evidence related to the potential for harm in landscape architecture practice. This document will attempt to fulfill that need."

Validation Report, Task Analysis, L.A.R.E., Submitted to: The Council of Landscape Architectural Registration Boards (CLARB), Professional Testing, Inc., August 2016

The Overview section provides a summary description of this report:

> "In November 2015 the Council of Landscape Architectural Registration Boards began a six-month task analysis process using a hybrid task analysis model. The hybrid task analysis model included three phases. The first phase was a review of the 2010 Task Analysis using the Delphi Technique to review job tasks internationally. The second phase included a focus group meeting with Landscape Architects who practice in North America to conduct a Task Inventory Analysis. The third phase included a large scale validation survey.
>
> In total, over 7,400 subject matter experts from 58 different countries participated in hybrid task analysis. This report presents a detailed description of the process, as well as the results of the 2016 task analysis."

2.0 Landscape Architects Protect Public Health, Safety, and Welfare

This section addresses how landscape architects protect public health, safety, and welfare through scope of practice and licensure.

Landscape architecture affects public health, safety, and welfare through design, analysis, management, and stewardship of the natural and built environment. The fundamental practice of landscape architecture includes keeping the public safe from hazards, protecting natural resources, sustainably managing the natural and built environment, and enhancing social, economic, cultural, and physical functioning, now and in the future. Due to the health, safety, and welfare impact of the profession, landscape architects are licensed in 52 jurisdictions.

Licensure is a critical state function for protecting the public from unqualified or incompetent individuals who engage in professional practice. Landscape architects undertake work on a daily basis involving protection of the health, safety, and welfare of the public. As with other design professions, including civil engineering and architecture, landscape architects have the potential to cause serious injury or death to users of technically designed public and private spaces. The potential for injury and death exists and is inherent within the practice of landscape architecture as demonstrated by the scope of practice and potential for harm.

Landscape architecture is a technically involved profession, affecting both complex systems in the built and natural environments. The profession affects the health, safety, and welfare of individual consumers, businesses of all sizes, governmental agencies, large institutional clients, and the general public who use the spaces designed by landscape architects. Landscape architecture design and development falls into the key categories of governmental, institutional, security, transportation, commercial, industrial, residential, public, and environmental projects. Specific project types include site planning and design, roadway design, pedestrian walkways, wetland construction and mitigation, park and trail systems, erosion control, stormwater management, brownfield reclamation, and community master plans.

The following examples in this section make clear—the cost of discovering substandard practitioners is a significant personal and financial risk when unwittingly imposed on individual consumers, and includes the risk of serious irreparable physical and monetary harm to children, pedestrians, major public projects, and private property. Licensing reduces the social cost of negligence, incompetence, and unethical behavior in landscape architecture practice.

Information in this section is supported by the ***Landscape Architecture Licensure Handbook: Ensuring Safe, Healthy, and Resilient Natural and Built Environments*, January 2017**. Transmitted to BPOR under separate cover, this resource addresses the importance of and necessity of landscape architecture licensure through the findings of empirical evidence of harm caused by incompetent landscape architectural work, ranging from the nuisance of repeated minor injuries to permanent injury and death.

2.1 Protection of Public Health, Safety, and Welfare: Scope of Practice

See Appendix A for publications on the scope of practice of landscape architects.
See Appendix E for examples of projects designed by Virginia-licensed landscape architects.

Given the breadth and scope of the profession, the practice of landscape architecture can best be explained by reviewing diverse elements of the profession and their impact on public health, safety, and welfare. The question, "What does a landscape architect do?" cannot be answered with just one sentence because the profession encompasses numerous different elements, even though all paths stem from the same foundation. The examples below illustrate the importance of practitioners being properly educated, trained, and tested in order to design projects that safely and positively impact the individual users and the community.

2.1.1 Selected examples of landscape architectural practice directly impacting health, safety, and welfare.

Improper investigation of soil conditions could result in injury or death and damage to property.

- Landscape architects undertake site planning and design with the benefit of proper soil and geotechnical investigations to prevent pavement and structural failures.
- Landscape architects commission, coordinate, review, and integrate soils investigation data and design recommendations of geotechnical engineers to ensure proper design and construction of pavements and foundations.

Improper design of pedestrian and bicycle circulation systems could result in injury or death and damage to property.

- Landscape architects use their knowledge of bike trail design criteria including design speed, sight and stopping distances of bicycles, and shoulder recovery zones to prevent loss of control of bicycles and accidents.
- Landscape architects use their knowledge of width, alignment, slopes, and surface requirements to prevent loss of control of bicycles and accidents.

Improper design of site vehicular circulation systems could result in injury or death and damage to property.

- Landscape architects undertake site planning and design with knowledge of required vehicle sight distance requirements at intersections to prevent vehicular, bicycle, and pedestrian accidents.
- Landscape architects use their knowledge of standard vehicle maneuvering requirements to prevent vehicular, bicycle, and pedestrian accidents, and prevent damage to property.

Improper code and ordinance research may lead to unsafe design and could result in injury or death and damage to property.

- Landscape architects use their knowledge of building egress requirements to prevent injury and loss of life..
- Landscape architects use their knowledge of emergency vehicle site and building access requirements to prevent injury and loss of life and property.
- Landscape architects use their knowledge of requirements for control of pedestrian access to dangerous slopes and retaining walls to prevent falls.
- Landscape architects use their knowledge of potential construction impacts to watersheds, aquifers, and surface water to prevent contamination of drinking water supplies.
- Landscape architects use their knowledge of impacts of modifications to wetlands to prevent potential inundation of property and roads.
- Landscape architects undertake site planning and design with knowledge of standards, codes, and laws regarding accessible design to prevent injury or death of physically-challenged persons.

Improper site planning and design that creates dangerous site conditions could result in injury or death and damage to property.

- Landscape architects understand conditions creating ambush sites including light levels, sight lines, and visual access to prevent injury, death, and property damage.
- Landscape architects undertake the correct design of retaining walls, grading, and site structures assuring the protection of the public from fall hazards.

Improper design of grading, drainage, and erosion control could result in injury or death and damage to property.

- Landscape architects undertake site planning and design with knowledge of runoff impacts to prevent inundation of building entrances and openings and damage to foundations and structures.
- Landscape architects use their knowledge of site planning and design involving vegetative slope stabilization to prevent sloughing of soils and landslides.

Improper design of recreational and play facilities could lead to injury or death and damage to property.

- Landscape architects understand pavement and surface material specifications to prevent deaths and injuries resulting from falls.

- Landscape architects use their knowledge of potential hanging and choking conditions to prevent deaths and injuries.

2.1.2 Selected examples of landscape architecture practice focused on death and injury

The following selected areas of landscape architectural practice impact health, safety, and welfare, and have the potential for death and injury. These topics represent only a partial range of the public health, safety, and welfare aspects of landscape architectural practice.

Water-Related Injuries and Deaths
Landscape architects design public and private swimming pools, public and private large-scale fountains and constructed water features; ponds and lakes; and public access to oceans, lakes, rivers, streams, and canals. There is a direct relationship between the design work of landscape architects involving water features and systems, both natural and developed, and the potential for deaths and injuries. Landscape architects design locations, access, barriers, lighting, circulation surfaces, and other elements associated with land development involving water features and systems. Improperly designed surfaces, including slip and trip hazards, poor access and barriers resulting in unauthorized access, poor lighting, and inadequate emergency access can result in injury and death.

Pedestrian Circulation-Related Injuries and Deaths
Landscape architects design numerous types of pedestrian environments, systems, and facilities for public use, including use by populations with differing needs and abilities.

Landscape architects design walking and jogging trails; fitness trails; nature trails; boardwalks; path and walk systems supporting commercial, industrial, educational, recreational, and institutional uses; urban streetscapes, public plazas and other gathering areas; community open space path systems; and sidewalks, paths systems, and crosswalks for residential subdivisions, communities, towns, and cities. Landscape architects design pedestrian circulation systems that are integrated and coexist with vehicular and bicycle use and circulation systems.

There is a direct relationship between the design work of landscape architects and potential pedestrian and circulation-related deaths and injuries. Landscape architects design locations, environs, alignments; integrate and separate different modes of transportation; provide for sight and stopping distance requirements; and design surfaces and pavements, barriers, access, and lighting. Uneven and poorly drained surfaces, poor lighting, inadequate sight and stopping distances, inadequate emergency access to building and facilities, and creation of environments that are conducive to criminal activity can result in injury and death.

Bicycle Circulation-Related Injuries and Deaths
Landscape architects design public and private facilities and systems involving and supporting bicycle access including bike trails, hiker/biker trails, bike lanes for roads and drives, mountain bike trails, and bicycle-related sports facilities. There is a direct relationship between the design work of landscape architects involving bicycle systems, and potential deaths and injuries. Landscape architects design locations, environs, alignments, surfaces and pavements, and lighting. Poor lighting, lack of recovery zones, inadequate emergency access, poor surfaces, and conflicts between cyclists and pedestrians, skateboarders, and in-line skaters can result in injury and death.

Playground-Related Injuries and Deaths
Landscape architects design public and private playgrounds including playground equipment and playground environments including surfaces, access control, different facilities by age group, facilities for special populations, accessible facilities, and related systems and features. There is a direct relationship between the design work of landscape architects involving playgrounds, and potential deaths and injuries. Landscape architects design locations, environs, lighting, equipment, surfaces and pavements, access, and recovery and safety zones. Poorly designed equipment with hanging and choking dangers, improper lighting, inadequate emergency access, inadequate clearance from structures, and improperly specified equipment without consideration of separate facilities for different age groups can result in death and injury.

2.2 Protection of Public Health Safety and Welfare: Licensure Criteria

The eligibility criteria for licensure serves as the first line of protection for consumers and communities. The majority of states that regulate landscape architecture require an accredited landscape architecture degree, a specified length of experience (usually two to four years), and successful completion of the four-part Landscape Architect Registration Examination (LARE).

See Appendix F ***"Impact of Landscape Architecture on the Public Health, Safety, and Welfare; How Licensure Protects the Public"*** *for information on how landscape architectural education and the Landscape Architect Registration Examination (LARE) address protection of public health, safety, and welfare.*

2.2.1 Education Requirement

See Appendix B for example course requirements for the undergraduate first-professional degree in the landscape architecture programs at Virginia Tech and the example course requirements for the graduate first professional degree at the University of Virginia.

The Landscape Architectural Accreditation Board (LAAB) is recognized by the Council for Higher Education Accreditation as the accrediting agency for first-professional baccalaureate and master's degree programs in landscape architecture in the United States. Currently, LAAB accredits at least one program at 73 institutions in the United States. There are 53 accredited MLA programs and 47 accredited undergraduate programs. In addition to the accredited programs one MLA program has achieved candidacy status. A program that has candidacy status has made a commitment to apply for initial accreditation within twelve months of its first graduating class.

LAAB develops standards to objectively evaluate landscape architectural programs and judges whether a school's program is in compliance with the accreditation standards. Accreditation evaluates all programs against standards that ensure the essential educational components leading to entry level professional competence. According to the LAAB standards, a first-professional degree curriculum "must include the core knowledge skills and applications of landscape architecture: landscape architectural history, philosophy, theory, values, ethics, practice, planning, design, implementation, and management." At a bachelor's level, it consists of "an educational context enriched by other disciplines, including but not limited to: liberal and fine arts, natural sciences, social sciences and opportunities for students to develop areas of interest." Those at a master's level must develop research in areas that provide expertise or expanded knowledge related to the profession. In more specific terms, an LAAB-approved curriculum must include coverage of:

History, theory, philosophy, principles, and values

- design history
- design theory
- criticism
- sustainability, resiliency, stewardship
- health, safety, and welfare

Design processes and methodology

- critical thinking
- analysis
- ideation
- synthesis
- site program
- iterative design development
- design communication

Systems and processes—natural and cultural (related to design, planning, and management)

- plants and ecosystems sciences
- built environment and infrastructure
- human factors and social and community systems

- human health and well-being

Communication and documentation
- written communication
- oral communication
- visual and graphic communication
- design and construction documents
- numeracy, quantitative problem-solving, and communication
- community and client engagement

Implementation
- construction technology and site engineering
- site materials
- use and management of plants and vegetation
- policies and regulation

Computer applications and advanced technologies
- visualization and modeling
- communication (conceptual and construction drawings)
- geospatial analysis

Assessment and evaluation
- site assessment
- pre-design analysis
- landscape performance
- post-occupancy evaluation
- visual and scenic assessment

Professional practice
- values
- ethics
- practice
- construction administration

Research and scholarly methods (for master's-level degree programs)
- quantitative and qualitative methods
- establishing a research hypothesis
- framing research questions
- literature/case study review/precedent review
- research integrity and protection of human subjects
- communication of research

Accreditation criteria also include many other factors, including strength of faculty, facilities, equipment, information systems, as well as the evidence of alumni professional accomplishments, which includes professional employment in the profession and licensure.

Accreditation is the safety net that ensures that every landscape architecture graduate has the basic knowledge necessary to practice landscape architecture.

2.2.2 Experience Requirement

Landscape architects, like other design professionals, understand that there is no substitute for experience in the preparation for practice of the profession. This is why landscape architects are required to work under the supervision of a licensed landscape architect for a certain amount of time before being eligible for licensure, usually

two to four years, with some states allowing other licensed professionals (architects, engineers) to serve as the supervisor for at least some of the training period.

The licensure process serves three main purposes in this area: (1) auditing the length of experience; (2) auditing the variety of experience; and (3) providing analysis of special circumstances for those individuals who do not have a landscape architecture degree. The first two of these functions safeguard the public from those individuals who are unprepared to be licensed—and protect the public health, safety, and welfare.

The licensing board must also handle special cases in which an individual has gained competence in landscape architecture through experience, without completion of a LAAB-approved degree program. Some states allow an applicant to pursue licensure eligibility by an alternative pathway focused on an extended period of experience. This is an important function of the licensing board, for it ensures qualified professionals are not being excluded from the licensure process. It is a critical safeguard to keep licensure from becoming a barrier to practice by those who are competent, and ensures that the main purpose of licensure remains the protection of the public health, safety, and welfare.

2.2.3 Examination Requirement

See Appendix C: L.A.R.E. Orientation, Understanding the Landscape Architect Registration Examination

Every state licensure law requires initial applicants to pass the Landscape Architect Registration Examination (LARE). The LARE is a four-section, 14-hour examination that tests the minimum knowledge, skills, and abilities necessary for a licensed professional to protect the public health, safety, and welfare. It is developed and administered by the Council of Landscape Architectural Registration Boards (CLARB). CLARB is comprised of the licensing boards from the U.S. states and Canadian provinces that license landscape architects.

The LARE is the most rigorously proven examination used by any of the major design professions. According to an independent audit conducted by the Educational Testing Service, the largest and most-respected testing consultant in the world, the LARE meets or exceeds all nationally recognized testing standards.

The content of the LARE is based on the results of a thorough Job Analysis Survey, which determines what tasks landscape architects do as part of their normal practice, and the knowledge, skills, and abilities (KSAs) required to accomplish those tasks in a manner that protects the public from harm. Testing experts then use a mathematical model to determine the best method for testing the KSAs. The result is an exam which tests those KSAs which most impact public health, safety, and welfare, using the most appropriate testing methodologies.

The Job Analysis Survey is the backbone of the LARE. Over 1,600 landscape architects across the United States and Canada were involved in updating the job analysis for landscape architects in 2015. The job analysis included five focus groups and one large-scale validation survey. Survey respondents were asked to rate all job tasks on three separate scales: how frequently the tasks were performed, how important the tasks were to successful performance of the job, and whether or not successful performance of each task was required at initial licensure. Overall, the tasks, and subsequent knowledge, that are performed most often, are considered the most important, and are required at the initial point of licensure, form the basis for the LARE.

This process illustrates the critical role that the LARE plays in ensuring that any licensed landscape architect can be trusted to protect the public health, safety, and welfare. The development of the exam is based upon identifying those critical tasks that impact the public health, safety, and welfare and building the examination around those KSAs that are necessary to complete those tasks. The LARE only includes those issues that (1) significantly impact public health, safety, and welfare, (2) are regularly performed as part of the normal practice of landscape architecture, and (3) the skills required to perform those functions are acquired prior to licensure. These components together comprise the minimum standards applicants must meet in order to safely practice landscape architecture.

The LARE is divided into four sections. Each section covers a critical content area and contains subcategories identifying the specific KSAs to be tested:

- ***Section 1 — Project and Construction Management.*** Tests knowledge and skills used throughout the project development process that are associated with the legal and financial aspects of a project. It includes questions on regulations, contracts, and construction administration processes.

- ***Section 2 — Inventory and Analysis.*** Tests a candidate's knowledge of inventory, data gathering and analysis techniques, and the conceptual decision-making process that occurs before site planning. Topics include site suitability, functional relationships, land use planning, principles of design, and stormwater management. An analysis of existing conditions may include site use, circulation, utility, microclimate, floodplain conditions, soil, slope, solar, surface hydrology, and other factors.

- ***Section 3 — Design.*** Tests KSAs associated with the synthetical process of incorporating elements into natural and built environment in a safe and effective manner. Includes site planning for buildings, layout of recreational equipment, vehicular and pedestrian circulation, roadway alignment design, and designing site lighting layouts.

- ***Section 4 — Grading, Drainage, and Construction Documentation.*** Tests KSAs required to manipulate the surface of the land and constructed features to meet design objectives and to direct surface and subsurface water. The grading portions of the section require examinees to manipulate contours and spot elevations, calculate slopes, grades, and volumes of material, facilitate the removal of stormwater, and change the elevations of the existing landscape to accommodate buildings, structures, and vehicular and pedestrian circulation systems. The drainage portions of the section test the ability to design surface and subsurface storm drainage systems, including hydraulic characteristics and storm drain connections, to effectively and safely manage stormwater.

While education and experience standards ensure that each licensure applicant has been prepared to practice the profession, the LARE provides a definitive measure of competence that is designed with the sole intent of protecting the public health, safety, and welfare. Only those that pass through this complete process can be designated a licensed landscape architect by the states in which they practice.

3.0 Landscape Architecture and Landscape Design—Key Differences

Section three responds to the following excerpt from the JLARC report concerning the justification for studying the regulatory status of landscape architects (emphasis added):

> *Landscape architects pose some risk to the public, but regulation does not effectively address risks. Landscape architects design outdoor spaces for business and residential developments, campuses, recreational facilities, parks, traffic corridors, and other open areas. They develop plans for grading and drainage, retaining walls, and locating buildings, roads, walkways, and plants (trees, shrubs, and flowers). A poorly designed feature, such as a hill with an overly steep grade, could create as safety hazard. Other design flaws, such as improper drainage, could lead to property or environmental damage.* ***However, individuals in other unregulated occupations, such as landscape designers, are allowed to perform largely the same work and present the same risks. The existence of unregulated occupations performing the same work suggests state regulation of landscape architects does not fully address risks.***

The information provided in this section highlights important and distinct differences between the professional practice of landscape architecture and the work of landscape designers through a comparison of:

- Key focus areas of the scope of landscape design versus landscape architecture;
- Definitions of landscape architecture and landscape design;
- Educational requirements and degree programs; and
- Mandatory state government requirement for licensure of landscape architects and the voluntary private association certification of landscape designers.

3.1 Key Focus Areas of the Scope of Landscape Design vs. Landscape Architecture

The following examples illustrate how the work of unregulated professions and occupations, such as landscape designers, does not substantially overlap with the scope of practice of landscape architects.

Landscape designers in Virginia:

- Typically focus on planting and hardscape design for small-scale sites and residential landscapes.
- When undertaking non-residential projects, landscape designers also primarily focus on planting and hardscape design for smaller-scale sites.
- Landscape designers do not serve as the prime design professional responsible for coordinating the work of architects, engineers, land surveyors, geotechnical engineers, scientists, and other professionals required to complete fully coordinated designs for commercial, institutional, industrial, recreational, transportation, and similarly complex site design projects.

In contrast, landscape architects in Virginia, as defined in the scope of practice of landscape architecture in the Code of Virginia:

- Undertake the site planning and design of institutional, commercial, industrial, recreational, streetscape, roadway, and open space projects of all scales.
- Can serve as the prime design professional responsible for the coordination of a team of architects, engineers, land surveyors, geotechnical engineers, scientists, and other professionals required to complete a fully coordinated complex site design.

3.2 Definitions of Landscape Architecture and Landscape Design

3.2.1 Definitions of Landscape Architecture

The following definitions are provided with links to online sources (emphasis added).

American Society of Landscape Architect Policy Statement

https://www.asla.org/uploadedFiles/CMS/Advocate/Public_Policies/Public/Licensure_Definition_of_Practice.pdf

Professional Licensure: Definition of the practice of Landscape Architecture (2002, Revised 2018):
"The American Society of Landscape Architects holds that the definition of the scope of practice provides the basis for the regulatory system and is used to identify work for which a license is necessary to safeguard the health, safety, and welfare of the public.

ASLA believes the **practice of landscape architecture**, for purposes of the licensing statute, **should be defined as any service where landscape architectural education, training, experience and the application of mathematical, physical, social, and natural science principles are applied. Practice includes consultation, evaluation, planning, design (including, but not limited to, the preparation and filing of plans, drawings, specifications and other contract documents) and administration of contracts pertaining to projects principally directed at the safe functional and aesthetic use; conservation and integration of natural and built environments**.

ASLA further believes the services included in the licensed scope of landscape architecture includes, but are not limited to, the following:

- consultation, planning, design, and responsible supervision in connection with the **conservation, development, and/or enhancement of land areas**;
- investigation, selection and **allocation of land and water resources for appropriate uses**;
- preparation, review, and analysis of **feasibility studies, land use master plans, site plans, plans of development, subdivision plans, and preliminary plats**;
- design of **landforms, site elements, stormwater management, and vegetative systems for soil conservation, erosion control, and other strategies for integrating the built and natural environments to promote site and community resilience and support ecosystem services**;
- preparation and sealing/signing of plans, drawings, details, specifications, permits, and other contract documents and the administration of contracts;
- **determining the location and siting of improvements, including buildings, structures, pedestrian and multi-modal circulation systems, signage, wayfinding, and other features**;
- design of fountains, walls, pools, and other **structures for outdoor living spaces for functional and aesthetic purposes**, for public and private uses;
- preparation of **vegetative and planting plans** designating the selection and placement of plant materials as a means **to minimize hazardous conditions and address public health and safety concerns** in proximity to human activities."

Unified Facilities Criteria (UFC), Landscape Architecture, United States Department of Defense, 29 April 2020:
https://www.wbdg.org/ffc/dod/unified-facilities-criteria-ufc/ufc-3-201-02
https://www.wbdg.org/FFC/DOD/UFC/ufc_3_201_02_2020.pdf

"This UFC establishes minimum landscape architectural requirements and best practices to promote consistent landscape architectural quality for Department of Defense (DoD) facilities worldwide. Where other criteria, statutory or regulatory requirements are referenced, comply with the more stringent requirement.

UFC 2-2 LANDSCAPE ARCHITECTURAL SITE DESIGN
[The following information is excerpted from UFC Chapter 2. See link provided above]

The focus of DoD landscape architecture is to support the users' mission. Landscape architecture combines **ecology, hydrology, engineering, planning, and functional design** to create successful DoD facilities that achieve the following goals:

- **Protect the health, safety, and welfare of all users**.
- **Elevate Installation functionality** and appearance to enhance the quality of life.
- Establish a sense of place and unique identity.
- **Preserve cultural and historic landscapes**.
- Provide **spaces considering 'human factors'**.
- Achieve **environmentally sustainable development** and operations.
- **Protect natural communities** of plants and wildlife.
- **Meet DoD requirements for outdoor water use and management**.
- Utilize operation and maintenance plans to ensure successful long-term viability of landscapes.

UFC APPENDIX A: BEST PRACTICES:
[The following is information excerpted from UFC Appendix A: Best Practices. See link provided above]

The Best Practices Appendix is considered guidance and not criteria. Its main purpose is to communicate proven facility solutions, systems, and lessons learned, but may not be the only solution to meet the requirement or design issue.

This Appendix identifies background information and practices for accomplishing certain landscape architectural site design services.

Resilience.
Resilience and adaptation are essential considerations for Installation planning and design. **Assess all potential site risks and design projects to minimize the long-term vulnerability of the site and optimize the opportunity for recovery**. Consult databased methodologies that project models for future conditions.

Hazard Response.
Hazards pose direct threats to Installations and DoD operations. **For each project, inventory potential hazards. Develop and implement design strategies that serve as appropriate response measures to these hazards.** This includes the **conservation, restoration, and creation of natural infrastructure assets, such as wetlands that mitigate flooding and storm surge.** In selecting response measures, **prioritize the Installation's critical built infrastructure, including energy, fuel, water supply, and utility services**.

Climate Resilience.
Consider the following potential climate change effects:
- Shifts in USDA plant hardiness zone designation
- Stresses on specific species
- Changes in disease and pest vector distribution
- Changes in regional precipitation patterns

Coastal erosion, flooding, storm surge, and sea level rise pose risks to DoD Installations. Address solutions to these through strategic land use planning, modifications and design interventions. **Consider natural and nature-based adaptation approaches**, including **preserving and restoring natural coastal ecosystem defenses, vegetated dunes, living shorelines, and living breakwaters**. Alteration and plant installation in and around natural landscape features may require environmental permitting.

Energy Conservation Planning.
Minimize building energy use for heating, ventilation, and air conditioning using vegetation to shade facades and shield the building from winds. **Minimize outdoor energy consumption** for lighting and other site amenities.

Materials.
Address **material selection from the basis of embodied energy and life cycle costs**. Practice **waste reduction and diversion** and consult the integrated solid waste management (ISWM) plan at the Installation level. Employ the use of:

- Salvaged, reclaimed, or refurbished materials. Verify that salvage, such as brick, is appropriate for outdoor use.
- Locally and regionally sourced materials.
- Materials with recycled content.
- Non-toxic materials, including the use of low-emitting and non-emitting materials.
- Raw materials that have been extracted responsibly or products that contain such raw materials.
- Sustainably grown and harvested trees and other plant material.

Remediation and Reclamation.
Engage an interdisciplinary team for projects that require **bioremediation, including phytoremediation, to address the complexities of rehabilitating a brownfield site.** Identify the benefits of bioremediation as applied to the identified project site. Select the appropriate methodology for mitigation based on specific site contaminants.
Adhere to EPA guidance and other AHJ guidance pertaining to **soil and groundwater remediation**.

Security and Anti-Terrorism.
Utilize design principles defined in **Crime Prevention Through Environmental Design (CPTED) to minimize safety and security risks**. Design and construct projects to **meet security and anti-terrorism criteria** as required in the project Basis of Design and RFP including **stand-off distances, planting restrictions, and visibility**.

[The following topics addressed in UFC Appendix A: Best Practices, represent the scope of practice of landscape architects undertaking projects for DoD facilities.]

Water Use Management

- Potable Water Reduction

Conservation and Resource Protection

- Natural Resources
- Cultural Resources
- Viewsheds
- Tree Preservation Plan

Circulation and Accessibility

- Pedestrian Circulation
- Bicycle Facilities
- Streetscape System
- Transit
- Trails and Troop Movement

Planting Design

- Sustainable and Resilient Planting Design
- Security and Anti-Terrorism
- Foreign Object Debris and Bird/Wildlife Aircraft Strike Hazards
- Native and Regionally Adapted Plants
- Integrated Pest Management

- Fire-resistant Landscaping
- Xeriscaping
- Invasive Species
- Pollinator Habitat
- Stormwater Management Areas
- Vegetated Roofs
- Green Walls

Forestry
- Reforestation
- Native Forest and Urban Forest Management

Erosion Control
- Vegetated Stabilization of Soils

Irrigation
- Alternative Water Sources

Hardscape
- Pervious Pavements
- Reduce Heat Island Effect

Walls and Fences
- Retaining and Freestanding Walls

Site Lighting
- Light Pollution and Light Trespass
- Energy Conservation

Site Furnishings
- Shelters
- Flagpoles
- Bike Storage

Common Areas, Recreational Facilities, and Playgrounds
- Playground Protective Surfacing
- Planting Design at Playgrounds (remove/avoid poisonous and hazardous plants)
- Pool and Aquatic Complexes
- Parade Grounds"

Virginia Tech Landscape Architecture program webpage:

"Landscape Architecture encompasses the design, analysis, planning, management, and stewardship of sustainable environments. Landscape architects design across a wide spectrum of projects: **parks and gardens, community design, urban design and planning, green infrastructure, and regional planning, as well as at the scale of watersheds and natural systems**. The **work of the profession is grounded in the natural and social sciences**, draws inspiration from nature and the arts, **and is implemented through innovative design, site engineering, construction, land management, and environmental technologies**. The Landscape Architecture Program guides students as they address some of the most important challenges of our time: **climate change; healthy living and empathetic design; urbanization; re-imagining water, food, energy and transportation; green infrastructure; remediation of spoiled and disturbed sites; and preserving critical natural resources**. We believe the work of the profession, at the critical intersection of natural and cultural systems, will be the most consequential of the design arts in the 21st century."
https://archdesign.caus.vt.edu/introduction/introduction-to-landscape-architecture-2/

3.2.2 Definitions of Landscape Design in Virginia

The following definitions, published by Virginia Polytechnic Institute and University (Virginia Tech) and by the Virginia Nursery and Landscape Association, are provided with links to sources (emphasis added).

Virginia Tech, School of Plant and Environmental Sciences, Landscape Horticulture and Design program webpage:

"Students in this major learn to **design, build, and manage aesthetic as well as functional landscapes using science-based practices and business decision-making skills** that improve the living environment and contribute to environmental sustainability. Graduates from this program may find jobs working at **landscape firms or lawncare/sports turf care companies in design and management roles**. Other career areas applicable to this major include **extension agent, municipal horticulturist, botanical garden personnel, and teacher**." https://spes.vt.edu/Academics/undergraduate-programs/landscape-horticulture-design.html

Virginia Nursery and Landscape Association, Virginia Certified Horticulturalist Exam Study Manual Chapter on Landscape Design webpage:

"**Landscape design can be defined as the art of organizing and enriching outdoor space through the placement of plants and hardscapes in an agreeable and useful relationship with the natural environment**. Today, "green" (or sustainable) design blends design with ecology. It uses elements and principles of design, xeriscaping concepts, relates people with the natural environment, and reduces environmental impact. It **creates a garden or landscape that a homeowner** can enjoy as well as providing monetary and environmental benefits." https://www.vnla.org/Certification/Landscape-Design-Chapter

Virginia Nursery and Landscape Association, Virginia Certified Horticulturalist Exam Study Manual Chapter on Landscape Design; comparison of landscape architect and landscape designer webpage:

"Who is a landscape architect? Legally to be called a landscape architect one must have a degree in landscape architecture which normally takes five years. To be a licensed landscape architect one must take and pass a landscape exam given by the state. **Landscape architects have a background in botany, landscape design, engineering and architecture. They tend to design commercial projects such as shopping centers, schools, businesses and large residential projects. Landscape architects are more qualified to design areas that need grading, such as commercial parking areas working with drainage issues.** They can design construction blueprints for such items as gazebos, decks, trellises, etc. Landscape architects therefore typically command a much higher salary than designers.

Who is a landscape designer? A person can become a landscape designer by receiving an associate's or a bachelor's in landscape design. A landscape designer differs from an architect in that they can design a landscape showing where a hardscaping item such a gazebo goes but are not qualified to draw plans to build the gazebo. They also, **tend to be more knowledgeable about plants.** Landscape designers can become certified through the Virginia Society of Landscape Designers. Many municipalities require landscape designs drawn by landscape architects and certified landscape designers for homes and businesses must meet requirements of the Chesapeake Bay Act (CBA)." https://www.vnla.org/Certification/Landscape-Design-Chapter

Virginia Society of Landscape Designers (VSLD) and Association of Professional Landscape Designers (APLD):

Information concerning how the Virginia Society of Landscape Designers (VSLD) defines landscape design can be found by visiting the VSLD website: www.vsld.org. Information concerning how the Association of Professional Landscape Designers (APLD) defines landscape design can be found by visiting the APLD website: www.apld.org.

3.3 Educational Requirements and Degree Programs of Landscape Architects and Landscape Designers

There are significant differences in the educational requirements and coursework for landscape architecture and landscape design. This section provides a comparison of the Landscape Architecture Accreditation Board (LAAB) approved first professional degree programs in landscape architecture at Virginia Polytechnic Institute and State University (Virginia Tech) and the University of Virginia to the degree programs for landscape design at Virginia Tech and George Washington University.

3.3.1 Programs for LAAB-Accredited First Professional Degrees in Landscape Architecture

Virginia Tech Bachelor of Landscape Architecture Degree Program, undergraduate course catalog webpage:

"Landscape Architecture encompasses the design, analysis, planning, management, and stewardship of sustainable environments. Landscape architects design across a wide spectrum of projects: parks and gardens, community design, urban design and planning, green infrastructure, and regional planning, as well as at the scale of watersheds and natural systems. The work of the profession is grounded in the natural and social sciences, draws inspiration from nature and the arts, and is implemented through innovative design, site engineering, construction, land management, and environmental technologies. The Landscape Architecture Program guides students as they address some of the most important challenges of our time: climate change; healthy living and empathetic design; urbanization; re-imagining water, food, energy, and transportation; green infrastructure; remediation of spoiled and disturbed sites; and preserving critical natural resources. We believe the work of the profession, at the critical intersection of natural and cultural systems, will be the most consequential of the design arts in the 21st century.

The core of the academic program is a rigorous sequence of design studios that allows students to explore a broad range of landscape architectural issues, contexts, and project types. Studios are accompanied by discussion, lecture, and laboratory courses that provide systematic and comprehensive coverage of the emerging body of knowledge related to technology, design theory, landscape ecology, and human/environment interaction.

The Bachelor of Landscape Architecture (B.L.A.) is a five-year first-professional degree program fully accredited by the Landscape Architecture Accreditation Board. Graduates have a wide range of employment and professional opportunities including work in private practice, multidisciplinary firms, public agencies and municipalities, non-government organizations, and non-profits."

Detailed list of degree requirements: https://www.undergradcatalog.registrar.vt.edu/1819/lar.html

Virginia Tech Master of Landscape Architecture (MLA) Degree Program webpage:

"The Master of Landscape Architecture program includes an accredited three-year professional degree program that prepares students for the field and practice of landscape architecture. This three-year degree program emphasizes the mastery of design through disciplinary and interdisciplinary studios that investigate the broad range of landscape scales and provide an intellectual base of knowledge in history, theory, and technology.

The MLA curriculum consists of two parts: Qualifying Studies and MLA Studies. All first-year students are required to complete a slate of qualifying courses. Qualifying Studies prepare students to study at the graduate level by providing a grounding in landscape architecture history and theory; basic design, technical knowledge, and skills; and natural and human systems as they relate to landscape planning and design. For most students, Qualifying Studies comprise one academic year and 30 credits of course work. Qualifying Studies are followed by a minimum of 50 credit hours of graduate-level coursework, MLA Studies, which includes general landscape architecture courses and electives pertaining to an area of focus selected by the student.

The first-professional MLA degree requires six studios. These studios train students to think and act as informed and responsible designers, rather than simply teaching "how to solve" design problems. With each successive studio, students become increasingly responsible for setting limits and self-directing their design work. The sequence culminates in the final year with thesis studio.

Each student, in cooperation with their major professor, will select free elective coursework to complement or expand the required professional coursework and serve as a vehicle for developing certain dimensions of professional competence. Elective coursework serves as an opportunity to develop a conceptual and theoretical base supporting one's expertise in a selected area of landscape architecture. Electives of this nature relate to and culminate in the thesis project.

The MLA program requires a minimum of nine credit hours of tectonics. Tectonics courses teach students to apply technical knowledge to problems and conditions characteristic of landscape architecture practice."

Detailed list of degree requirements:
https://secure.graduateschool.vt.edu/graduate_catalog/program.htm?programID=002d14431ce38e83011ce38e981b0054

University of Virginia Master of Landscape Architecture Degree Program webpage:

"Our curriculum is a structured series of semesters that build incrementally from a core base of knowledge and skills laid out in the first year. While the first year is fully prescribed in its course requirements, later semesters leave elective options that allow students to pursue their own individual interests that can lead to a final independent design research studio or thesis.

DESIGN STUDIOS: The core of each semester is the design studio (6 credit hours), where students are introduced to fundamental design methodologies and are asked to pursue and develop their own research. The studio sequence exposes students to the range of scales and topical issues in landscape architecture. In emphasizing the ability to read and interpret a site within its context and shape its future based on those findings, the initial studios are based locally and emphasize on-site experience and documentation of place. Studios in the second and third years offer students opportunities to participate in interdisciplinary studios in cities and locations around the country and abroad. These advanced studios are research-based, which encourages students to investigate the broader issues beyond a specific design problem and arrive at innovative and bold proposals.

In the final semester of all four-year-degree programs, students have the option to take the research studios where they develop an individual line of inquiry or elect to undertake an independent research 'Thesis' studio. Both a design research methods class, as well as a design research seminar, must be taken in advance in order to develop a theoretical basis for independent research.

Supporting the design studios, we have developed three tracks of curricula in related technical and theoretical content:

ECO-TECH: our Eco-Tech or "ecology and technology" sequence integrates the content of plants, landform, water systems, bio-engineering, and regenerative technologies, all focused on innovation through living systems.

DESIGN COMPUTATION: The Design Computation track presents a broad range of design tools from hand drawing and modeling to digital drawing, simulation, and fabrication.

HISTORY AND THEORY: Finally, the History and Theories sequence establishes the conceptual underpinnings of ancient to contemporary precedents, challenging students to put their work into an evolving body of critical thinking and knowledge. These three tracks in the curriculum are integrated with projects carried out in studios.

Our curriculum also offers a series of LAR Advanced courses from which students choose to allow for further concentration in one of the three tracks. Finally, students have a range of open electives that can be taken in the department, schoolwide, and across the university to explore special topics in landscape architecture and issues in the related disciplines."

Detailed list of degree requirements:
http://records.ureg.virginia.edu/preview_program.php?catoid=50&poid=6394

3.3.2 Programs for Degrees in Landscape Design

Virginia Tech Bachelor of Science Degree Program with concentration in Landscape Horticulture and Design webpage:

Students in this major learn to design, build, and manage aesthetic as well as functional landscapes using science-based practices and business decision-making skills that improve the living environment and contribute to environmental sustainability. Graduates from this program may find jobs working at landscape firms or lawncare/sports turf care companies in design and management roles. Other career areas applicable to this major include Extension agent, municipal horticulturist, botanical garden personnel, and teacher."

Detailed list of degree requirements:
https://www.undergradcatalog.registrar.vt.edu/0910/als/hort.html#Anchor-Landscape-49575

George Washington University, College of Professional Studies, Graduate Certificate and Master of Professional Studies (Landscape Design) webpage:

"The Landscape Design graduate certificate or master's degree program is ideally suited for landscape professionals seeking to upgrade skills, individuals who want to become professional landscape designers, amateurs with an interest in the art of garden design, institutional horticultural staff, nursery employees and garden-design writers. Courses are geared to small-scale landscape design applications with emphasis on sound design principles, good site engineering methods, and creative use of plant materials.

The 46-credit Master of Professional Studies degree in Landscape Design combines the Landscape Design graduate certificate program with the 18-credit Graduate Certificate in Sustainable Landscapes. Students acquire an understanding of best practices in landscape conservation and sustainability, adapted to the small-scale landscape."

Detailed list of degree requirements: http://bulletin.gwu.edu/courses/psld/

3.4 Requirements for Licensure of Landscape Architects and the Voluntary Private Association Certification of Landscape Designers

This subsection looks at the regulatory status of landscape architects and landscape designers. It includes a review of the requirements for licensure of landscape architects and the requirements for obtaining a landscape designer private certification from the Association for Professional Landscape Designers (APLD) and the Virginia Society of Landscape Designers (VSLD).

3.4.1 Regulatory Status of Landscape Architects

Fifty-two jurisdictions have recognized that regulation of landscape architecture is necessary to protect the public health, safety, and welfare.

States typically follow the three-step process to earn licensure, which is common among all of the design professions, and includes a combination of **education**, **experience**, and **examination**.

Education
Most landscape architects have an accredited degree in landscape architecture. The Landscape Architectural Accreditation Board (LAAB) accredits 100 Bachelor- and Master-level programs at 73 institutions across the United States. Many states provide some flexibility for educational background, allowing candidates with more years of experience to qualify without an accredited degree in order to provide alternative pathways into the profession.

Experience
Most states require that landscape architects have 2–4 years of experience (depending on the state) under a licensed landscape architect in that state. Some states allow experience to be gained under the supervision of architects and/or professional engineers.

Examination
All states require every candidate to pass the four-part Landscape Architect Registration Examination (LARE). While education and experience standards ensure each candidate has been prepared to enter the profession, the LARE provides a definitive measure of competence to ensure each landscape architect will protect the public health, safety, and welfare.

Skills tested include:

- project development;
- site suitability;
- stormwater management;
- erosion control;
- hydrology;
- irrigation;
- location of and layout of structures;
- vehicular and pedestrian circulation;
- roadway alignment design;
- site lighting layouts;
- manipulation of contours and spot elevations;
- calculations of slopes, grades, and volumes of material;
- design of surface and subsurface storm drainage, including hydraulic characteristics and storm drain connections; and
- site planning for buildings and structures.

Virginia Requirements for Landscape Architecture Licensure
https://law.lis.virginia.gov/admincode/title18/agency10/chapter20/section420/

Virginia Administrative Code section 18VAC10-20-420. *Requirements for Licensure*. provides the requirements for licensure of landscape architects in Virginia (emphasis added):

> A. Applicants for licensure as a landscape architect shall satisfy the requirements of subsection B or C of this section.
>
> B. An applicant who has **graduated from a landscape architecture curriculum accredited by the Landscape Architectural Accreditation Board (LAAB)** shall have:
>
> 1. Obtained a **minimum of 36 months of experience** as follows:
>
> a. A minimum of **12 months of experience under the direct control and personal supervision of a licensed or certified landscape architect**; and
>
> b. The remaining **24 months of experience under the direct control and personal supervision of a licensed or certified landscape architect or a licensed architect, professional engineer, or land surveyor**, in accordance with the LANDSCAPE ARCHITECTS EXPERIENCE CREDIT TABLE; and
>
> 2. **Passed all sections of the Council of Landscape Architectural Registration Board (CLARB)-prepared exam**.

3.4.2 Regulatory Status of Landscape Designers

In general, landscape designers are not regulated within the United States. However, as noted earlier, some aspects of the work of landscape designers (primarily planting design and hardscape design) overlaps with the scope of practice of landscape architects as well as with architects and civil engineers.

Given that landscape designers primarily focus on small-scale landscapes and/or planting and hardscape design, it's common for states to either exempt landscape designers from landscape architecture licensure requirements or, in some cases, restrict the scope of unlicensed practice of landscape design. This approach is similar to the Code of Virginia exempting the practice of single-family residential dwelling designers from architectural licensing.

The requirements to become a Qualified Professional Member of the Association of Professional Landscape Designers (APLD) or to become a Virginia Society of Landscape Designers (VSLD) Certified Landscape Designer are outlined below.

For the APLD and VSLD voluntary private association certification programs, there are:

- No mandatory requirements for an associate or bachelor's degree in landscape design; and
- No examination requirement.

Association for Professional Landscape Designers Qualified Professional

At the national level, the Association for Professional Landscape Designers (APLD) offers a private professional association program for voluntary certification as a Qualified Professional member of APLD. A Qualified Professional is "a landscape designer who engages in the practice of landscape design for monetary compensation and contains more than 3 years of professional landscape design experience. Documentation of education and experience is required." Once approved by APLD as a Qualified Professional, the member must agree to adhere to APLD's Standards of Practice and maintain 30 CEUs every three years.

The education requirement is 1) an associate degree or higher in landscape design-based education from and accredited institution, or 2) attendance in landscape design classes or seminars. The experience requirement includes proof of experience or professional business status (i.e., proof of liability insurance, business license, IRS letter of determination, letter of incorporation, sales tax certificate, tax return, certificate of insurance, affidavit from employer, etc.). There is no examination requirement. https://www.apld.org/join/

Virginia Society of Landscape Designers Certified Landscape Designer

Within Virginia, the Virginia Society of Landscape Designers (VSLD) offers a private professional association program for voluntary certification as a VSLD-Certified Landscape Designer. Requirements for certification include providing information on employment and business experience (residential, commercial, estate); detailed resume; description of applicant's design process; information on education including landscape design education; two professional endorsements and three letters of reference from clients; a professional comprehensive landscape master plan drawn to scale; a plant specification list; and before and after photographs for completed projects. Once certified, members must maintain 10 CEUs per year. There is no examination requirement. https://www.vsld.org/membership-benefits/

4.0 How the Practice of Landscape Architects Overlaps with the Practice of Architects and Engineers

This section provides an overview of areas of overlapping practice between landscape architects, architects, and engineers. The purpose of outlining the areas of scope of practice overlap is to demonstrate how substantial aspects of the practice of landscape architects involves protection of public health, safety, and welfare.

4.1 Definitions of Landscape Architect/Landscape Architecture, Architect/Architecture, and Professional Engineer/Engineering Provided in the Code of Virginia

The Code of Virginia section § 54.1-400. *Definitions* provides the following definitions for Landscape Architect/Landscape Architecture, Architect/Architecture, and Professional Engineer/Engineering https://law.lis.virginia.gov/vacode/title54.1/chapter4/section54.1-400/ :

> **"Landscape architect"** means a person who, by reason of his special knowledge of natural, physical, and mathematical sciences, and the principles and methodology of landscape architecture and landscape architectural design acquired by professional education, practical experience, or both, is qualified to engage in the practice of landscape architecture and whose competence has been attested by the Board through licensure as a landscape architect.
>
> The **"practice of landscape architecture"** by a licensed landscape architect means any service wherein the principles and methodology of landscape architecture are applied in consultation, evaluation, planning (including the preparation and filing of sketches, drawings, plans and specifications), and responsible supervision or administration of contracts relative to projects principally directed at the functional and aesthetic use of land.
>
> **"Architect"** means a person who, by reason of his knowledge of the mathematical and physical sciences and the principles of architecture and architectural design, acquired by professional education, practical experience, or both, is qualified to engage in the practice of architecture and whose competence has been attested by the Board through licensure as an architect.
>
> The **"practice of architecture"** means any service wherein the principles and methods of architecture are applied, such as consultation, investigation, evaluation, planning, and design, and includes the responsible administration of construction contracts, in connection with any private or public buildings, structures or projects, or the related equipment or accessories.
>
> "**Professional engineer"** means a person who is qualified to practice engineering by reason of his special knowledge and use of mathematical, physical, and engineering sciences and the principles and methods of engineering analysis and design acquired by engineering education and experience, and whose competence has been attested by the Board through licensure as a professional engineer.
>
> The **"practice of engineering"** means any service wherein the principles and methods of engineering are applied to, but are not necessarily limited to, the following areas: consultation, investigation, evaluation, planning, and design of public or private utilities, structures, machines, equipment, processes, transportation systems, and work systems, including responsible administration of construction contracts. The term "practice of

engineering" shall not include the service or maintenance of existing electrical or mechanical systems.

4.2 Competency for Assignments

Section 18VAC10-20-730. *Competency for Assignments* Provides a basis for protection of public health, safety, and welfare by requiring regulated design professionals to only undertake assignments they are qualified to undertake
https://law.lis.virginia.gov/admincode/title18/agency10/chapter20/section730/:

> A. The professional shall undertake to perform professional assignments only when qualified by education or experience, or both, and licensed or certified in the profession involved. Licensed professionals may perform assignments related to interior design provided they do not hold themselves out as certified in this profession unless they are so certified by this board. The professional may accept an assignment requiring education or experience outside of the field of the professional's competence, but only to the extent that services are restricted to those phases of the project in which the professional is qualified. All other phases of such project shall be the responsibility of licensed or certified associates, consultants or employees.
>
> B. A professional shall not misrepresent to a prospective or existing client or employer his qualifications and the scope of his responsibility in connection with work for which he is claiming credit.
>
> C. The professional shall adhere to the minimum standards and requirements pertaining to the practice of his own profession, as well as other professions if incidental work is performed.

This section of the Administrative Code of Virginia pertains to architects, professional engineers, and landscape architects for the protection of public health, safety, and welfare.

4.3 APELSCIDLA Board Actions Concerning Challenges to the Scope of Practice of Landscape Architects that Overlaps with the Practice of Engineers and Architects.

The following two APELSCIDLA Board actions demonstrate how the practice of qualified landscape architects overlaps with the scope of practice of professional engineers and architects. The first example focuses on the preparation of site plans and stormwater management plans and the second example focuses on the preparation of plans required to protect the Chesapeake Bay from non-point source pollution.

4.3.1 Letter dated 12/18/2007 from Jay W. DeBoer, Director of the Department of Professional and Occupational Regulation (DPOR), to David S. Ekern, PE, Commissioner, Virginia Department of Transportation (VDOT)

Background:
Director DeBoer's letter was in response to a letter sent by Kendal R. Walus, VDOT's State Structure and Bridge Engineer, to the APELSCIDLA Board requesting clarification regarding whether or not landscape architects were qualified to prepare site plans and undertake design of closed (piped) storm water management systems. Kendal R. Walus' letter was prompted by complaints submitted to VDOT by landscape architects that VDOT site plan reviewers were refusing to accept site plans for review that were prepared and sealed by landscape architects.

The relevant sections of Director DeBoer's letter include [emphasis added]:

> "The Board [APELSCIDLA Board] has recently been advised of several instances in which the Virginia Department of Transportation (VDOT) **has failed to accept site plans prepared and sealed by certified landscape architects**. As you know, the General Assembly during its 2006 Session passed House Bill 521, which amended **the Code of Virginia to require acceptance of such plans**.
>
> … In addition, the following official interpretation by the APELSCIDLA Board – issued February 8, 2007, to Kendal R. Walus, PE, VDOT's State Structure and Bridge Engineer – provided supplemental clarifications to assist in case-by-case determinations.
>
> "… The Professional Engineers Section of the Board for Architects, Professional Engineers, Land Surveyors, Certified Interior Designers and Landscape Architects (APELSCIDLA Board) reviewed the issue at their most recent meeting on December 12, 2006. After discussion, **the Board decided that Certified Landscape Architects may be qualified to design closed storm water management systems** with the proper education, training and experience in accordance with subsection A of Regulation 18 VAC 10-20-730."

This DPOR letter clearly establishes that landscape architects may undertake assignments for closed system design (piped storm water) in addition to the design of open system stormwater management systems (bioswales, retention and detention basins, drainage ditches, etc.). The DPOR letter also references the Code of Virginia requirement regarding state government agency and local government acceptance of site plans prepared and sealed by qualified landscape architects for review. The preparation of site plans and design of stormwater management systems is work that overlaps with the scope of practice of civil engineers, and in some cases architects, and clearly involves protection of public health, safety, and welfare. If the protection of public health, safety, and welfare was not inherent to site planning services, then the Code of Virginia would not limit the preparation of site plans to qualified landscape architects, professional engineers, architects, and land surveyors. In that case, any person could prepare and submit for review such plans. Logic dictates that if the site planning work of architects and engineers involves protection of public health, safety, and welfare, then site plans prepared and submitted for review by landscape architects also involves protection of public health, safety, and welfare.

It is important to note that the requirement for acceptance of sealed site plans by landscape architects and the clarification that landscape architects may be qualified to prepare stormwater management plans provided a partial justification for the General Assembly's passage of the 2010 Senate Bill 940 that revised the regulatory status of landscape architects from certified to licensed.

4.3.2 "Board Considers CBLAD Compliance Plans," *Dimensions*, Summer 2004, newsletter article published by the APELSCIDLA Board

Background:
This article provides clarification regarding which design professionals, regulated by the APELSCIDLA Board, may be qualified to prepare Chesapeake Bay Preservation Act compliance plans. Compliance plans are prepared to control and manage non-point source pollution to protect the water quality of the Bay.

The relevant sections of the article include [emphasis added]:

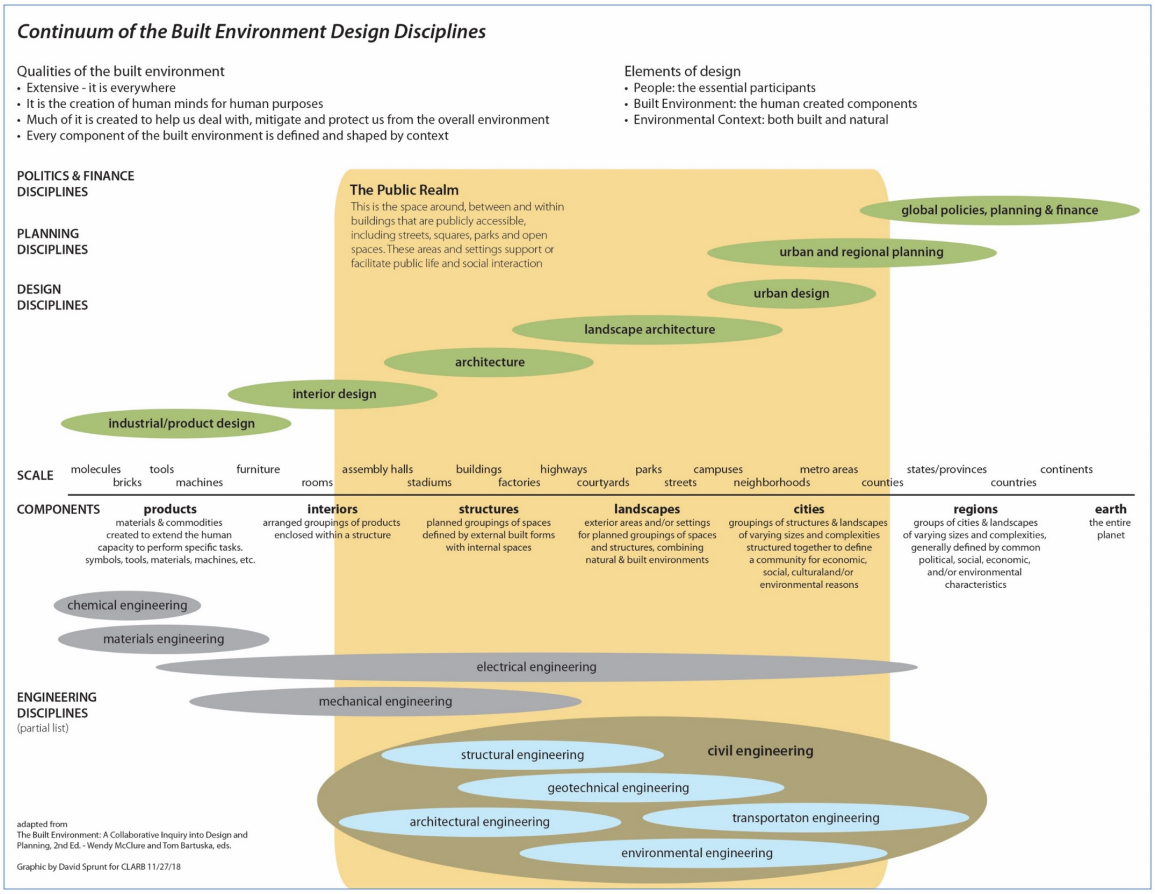
> "At several recent Board meetings, the Board discussed an issue brought to its attention regarding confusion among regulants of the Board as to who may prepare Chesapeake Bay Preservation Act compliance plans. After much consideration and hearing testimony from various people relating to this issues during several Board meetings, then Board adopted the following response regarding who may prepare Chesapeake Bay Preservation Act compliance plans:

> **'The APELSCIDLA Board… has determined that work associated with the Chesapeake Bay Preservation Act may involve the practice of engineering, land surveying, and landscape architecture** (pursuant to § 54.1-400 of the Code of Virginia) depending on the exact nature of the work being performed. Further, review of this issue in the past has also revealed that this work may be incidental to other professional work and has **determined that architects are also competent to perform some of the types of calculations required by the Act**. The issue of which professional is authorized to perform such work is dependent on the type of work being performed, applicable statutes, regulations, and ordinances, as well as the competency of the individual practitioner.'"

This DPOR newsletter article clearly communicated that the APELSCIDLA Board established that landscape architects may undertake assignments that involve the preparation of plans and designs for controlling and managing non-point source pollution to protect water quality. The preparation of Chesapeake Bay Preservation Act compliance plans is work that overlaps with the scope of practice of civil engineers and land surveyors and in some cases architects, and clearly involves protection of public health, safety, and welfare. Logic dictates that if these plans prepared by engineers, land surveyors, and architects involves protection of public health, safety, and welfare, then the same plans prepared and submitted for review by landscape architects also involves protection of public health, safety, and welfare.

4.4 Continuum of the Built Environment Design Disciplines

The following diagram illustrates conceptually how landscape architecture overlaps with other design disciplines including architecture and engineering.



4.5 Examples of Landscape Architecture Practice Overlap with Engineering and Architecture

This section provides specific examples of how the practice of landscape architecture overlaps with engineering and architecture. The subsections highlight documents sealed, signed, and submitted to local governments and state agencies for review and approval, as well as sealed and signed site construction documents.

4.5.1 Land Development Documents Sealed and Signed and Submitted to Local Governments and State Agencies for Review and Approval

Below is the Commonwealth of Virginia's definition of site plans and preliminary subdivision plats and other Commonwealth of Virginia and local government laws indicating the scope of practice of landscape architects, all of which overlaps with the scope of practice of architects and professional engineers.

The Code of Virginia section § 15.2-2201. *Definitions.* Defines site plan and preliminary subdivision plat as:

> "Site plan" means the proposal for a development or a subdivision including all covenants, grants or easements and other conditions relating to use, location and bulk of buildings, density of development, common open space, public facilities and such other information as required by the subdivision ordinance to which the proposed development or subdivision is subject. https://law.lis.virginia.gov/vacode/title15.2/chapter22/section15.2-2201/
>
> "Preliminary subdivision plat" means the proposed schematic representation of development or subdivision that establishes how the provisions of §§ 15.2-2241 and 15.2-2242, and other applicable statutes will be achieved. https://law.lis.virginia.gov/vacode/title15.2/chapter22/section15.2-2201/

The Virginia Department of Engineering and Buildings (DEB) is the state agency responsible for:

- Enforcing the Virginia Uniform Statewide Building Code to assure compliance with life safety and code requirements in design and construction
- Providing building code, cost, and procurement reviews of proposed state agency construction and capital outlay projects
- Developing policies, procedures, standards, forms, and other documents for the procurement of professional and construction services by state agencies
- Authoring and maintaining the Commonwealth of Virginia's Construction and Professional Services Manual (CPSM)

The Commonwealth of Virginia's Construction and Professional Services Manual (CPSM) includes the following definition of landscape architects:

> Landscape Architect: An individual licensed by the Commonwealth of Virginia as a 'Landscape Architect' by the APELSCIDLA Board of the Department of Professional and Occupational Regulation. The Landscape Architect may function as an A/E Project Manager and may be the A/E of Record on those Projects where the preponderance of the work is represented by the application of the principles and methodology of landscape architecture in consultation, evaluation, planning (including the preparation and filing of sketches, drawings, plans and specifications) and responsible supervision or administration of contracts relative to Projects principally directed at the functional and aesthetic use of land." https://dgs.virginia.gov/globalassets/business-units/bcom/documents/cpsm/cpsm-2020-rev-0_.pdf

The CPSM definition of landscape architect indicates that qualified landscape architects can serve as the Architect/Engineer project manager and/or the Architect/Engineer of Record (prime consultant responsible

for all subconsultants) for state agency projects. The inclusion of landscape architects within the group of regulated design professionals that may serve as a project manager and/or A/E of Record is a clear indication that the Virginia Department of Engineering and Buildings recognizes the qualifications and scope of practice of landscape architects including the role of landscape architects in the design of complex projects for Commonwealth of Virginia agencies.

The Code of Virginia section § 54.1-409. *Practice of landscape architecture; license required*. states [emphasis added]:

> A. Beginning July 1, 2010, a person who engages in the practice of landscape architecture as defined in § 54.1-400 and who holds himself out as a landscape architect shall hold a valid license prior to engaging in such practice. **Resulting site plans, plans of development, preliminary plats, drawings, technical reports, and specifications, submitted under the seal, stamp or certification of a licensed landscape architect, shall be accepted for review by local and state authorities, in connection with both public and private projects.** However, no landscape architect, unless he is also licensed as a land surveyor, shall provide boundary surveys, plats or descriptions for any purpose, except in conjunction with or under the supervision of an appropriately licensed professional, who shall provide certification, as required. Landscape architects shall only engage in projects which they are qualified to undertake based on education, training, and examination and in accordance with the practice of landscape architecture as defined in § 54.1-400. https://law.lis.virginia.gov/vacode/title54.1/chapter4/section54.1-409/

Example of a local government's ordinances regarding site plans where regulated design professionals are authorized preparers.

The County of Albemarle, Virginia, Code of Ordinances Sec. 3.1 - *Definitions.* defines site plan [emphasis added]:

> "Site plan" means **a plan** satisfying the requirements of section 32 **that delineates the overall scheme of development of one or more lots including, but not limited to, grading, engineering design, construction details and survey data for existing and proposed improvements**. The document identified in this chapter as a site development plan is a site plan.
> https://library.municode.com/va/albemarle_county/codes/code_of_ordinances?nodeId=COALCOVI_CH18ZO_S3DE

The County of Albemarle, Virginia, Code of Ordinances Sec. 32.6.1 - *Form and style of a final site plan*. that each site plan will comply with [emphasis added]:

> a. *Authorized preparer*. **The plan**, and any amendments to a plan, **shall be prepared and sealed, signed and dated by an architect, professional engineer, land surveyor, or certified landscape architect, each of whom shall be licensed to practice in the Commonwealth of Virginia**.
> https://library.municode.com/va/albemarle_county/codes/code_of_ordinances?nodeId=COALCOVI_CH18ZO_S32SIPL_S32.6FISIPLFOCO_S32.6.1FOSTFISIPL

In all cases above, landscape architects are recognized as a regulated design professional and authorized preparer.

4.5.2 Site Construction Documents

This subsection lists site construction documents that are typically prepared by landscape architects as well as qualified architects and professional engineers for site development.

4.5.2.1 Site Construction Drawings (plans, sections, details)

- Tree Protection Plan and Details
- Soil Erosion and Sedimentation Control Plan and Details
- Stormwater Management Plan
- Existing Conditions Plan
- Demolition Plan
- Clearing Plan
- Grading and Drainage Plan
- Layout Plan
- Materials Plan
- Pedestrian/Bicycle Trails Plans and Profiles
- Road Plans and Profiles (excluding public highways)
- Planting Soils Plan
- Planting Plan and Details
- Lighting Plan and Details
- Signage Plan and Details
- Plan Enlargements
- Site Sections
- Site Elevations
- Site Details
- Irrigation Plan
- Irrigation Details

4.5.2.2 Construction Specifications

The 2019 Landscape Architecture Library of MasterSpec specifications published and copyrighted by the American Institute of Architects, represents the range of specifications typically prepared by landscape architects. These specifications are used by landscape architects, architects, and engineers. Division 00 Procurement and Contracting Requirements and Division 01 General Requirements are prepared by landscape architects when serving as the prime consultant leading design teams.

See Appendix G for the list of 2019 Landscape Architecture Library of MasterSpec specifications, published by the American Institute of Architects.

5.0 Analysis of APELSCIDLA Board Complaints Data

This section responds to the 2018 Joint Legislative Audit and Review Commission (JLARC) report finding:

> *There is little evidence that landscape architects are improperly practicing their occupation in Virginia. Over the past 10 years, there were four complaints resulting in a DPOR investigation, and DPOR found only one violation of rules and one case of unlicensed activity.*

5.1 Investigated Complaints Data Analysis

ASLA Virginia has calculated the percentage of claims or complaints investigated by the Board for Architects, Professional Engineers, Land Surveyors, Certified Interior Designs, and Landscape Architects (APELSCIDLA Board) per the total number of regulants for each profession for calendar years 2015, 2016, 2017, 2018, and 2019.

The purpose of this analysis was to compare the rate of investigated complaints for landscape architects with the rate of investigated complaints for architects, professional engineers, land surveyors, and certified interior designers.

See Appendix D for all data provided by the APELSCIDLA Board.

All data was provided by the APELSCIDLA Board.
Data for each calendar year represents the end-of-year data totals.
Regulant populations represent data collected as of January 1 after end of calendar year.

Legend:
Arch = Architect
PE = Professional Engineer
LS = Land Surveyor
LS B = Land Surveyor B
LS Photo = Land Surveyor Photogrammetrist
LA = Landscape Architect
CID = Certified Interior Designer
Regulants = Total Regulant Population
Claims = Investigated Complaints Closed
per capita % = Annual Percent of Claims by Profession [Total Claims / Regulant Population]

CY 2019			
Profession	Regulants	Claims	per capita %
Arch	7,528	3	0.04%
PE	29,617	17	0.06%
LS	1,289	2	0.16%
LS B	71	1	1.41%
LS Photo	115	0	0.00%
LA	943	0	0.00%
CID	500	0	0.00%

CY 2018			
Profession	Regulants	Claims	per capita %
Arch	7,432	3	0.04%
PE	29,157	17	0.06%
LS	1,254	1	0.08%
LS B	75	1	1.33%
LS Photo	118	0	0.00%
LA	924	0	0.00%
CID	498	0	0.00%

CY 2017			
Profession	Regulants	Claims	per capita %
Arch	7,394	3	0.04%
PE	28,724	10	0.03%
LS	1,265	2	0.16%
LS B	75	0	0.00%
LS Photo	123	0	0.00%
LA	907	0	0.00%
CID	494	0	0.00%

CY 2016			
Profession	Regulants	Claims	per capita %
Arch	7,237	1	0.01%
PE	28,242	13	0.05%
LS	1,265	3	0.24%
LS B	85	0	0.00%
LS Photo	130	0	0.00%
LA	902	0	0.00%
CID	497	0	0.00%

CY 2015			
Profession	Regulants	Claims	per capita %
Arch	7,227	3	0.04%
PE	27,922	13	0.05%
LS	1,290	2	0.16%
LS B	86	0	0.00%
LS Photo	135	0	0.00%
LA	882	0	0.00%
CID	504	0	0.00%

5.2 Conclusion

Note, that as a group, design professions regulated by the APELSCIDLA Board have few to no investigated complaints on a percentage of regulant population basis. Over the past five years, all professions regulated by the APELSCIDLA Board experienced investigated complaint rates below 1% with the exception of land surveyor Bs.

During calendar years 2015, 2016, 2017, 2018, and 2019, the percentage of investigated complaints for architects, professional engineers, and landscape architects, was less than 1% of the respective regulant populations.

If the low number of complaints is part of the basis for arguing for reducing the level of regulation of landscape architects, then it is not clear why JLARC singled out landscape architects given the APELSCIDLA Board-regulated architects, professional engineers, and land surveyors have very similar rates of investigated complaints.

Given the similarly low rates of investigated complaints for architects, professional engineers, and landscape architects, using investigated complaint data for landscape architects without comparison with the rates of investigated complaints for architects and professional engineers appears to be misleading regarding the relationship of the level of regulation with the number of investigated complaints.

Typically, when one thinks of the responsibilities of a licensure board, one thinks of enforcement. This is an important function for any regulatory agency, but in the case of the design professions, it is one that is employed sporadically. The design professions generally have low rates of disciplinary cases compared to the medical professions. This may indicate that the actual establishment of licensure serves as an adequate protection of the public health, safety, and welfare so that additional regulatory measures are usually unnecessary. By setting competency requirements to the profession and ensuring that unqualified individuals do not practice, the Commonwealth ensures that the public is protected.

At times, the argument is made that the lack of disciplinary actions against landscape architects demonstrates that there is no need to regulate landscape architects. However, the investigated complaint rate for landscape architects is consistent with architects and professional engineers in the Commonwealth.

6.0 Determining the Need for Landscape Architecture Regulation

This section responds to the criteria and guidelines set forth in § 54.1-311 of the Code of Virginia for determining the need for the appropriate degree of regulation for a profession or occupation.

In 2018, the Joint Legislative Audit and Review Commission (JLARC) submitted a report to the Governor and General Assembly of Virginia addressing the operations and performance of the Department of Professional and Occupational Regulation (DPOR). The *Report to the Governor and the General Assembly of Virginia, Operations and Performance of the Department of Professional and Occupational Regulation, Joint Legislative Audit and Review Commission (JLARC)*, 2018, included a recommendation for the DPOR's Board of Professional and Occupational Regulation (BPOR) to conduct a study addressing the continued need for regulating landscape architects and others.

Link to JLARC report: http://jlarc.virginia.gov/2018-dpor.asp

JLARC report recommendation addressing landscape architects [emphasis added]:

> ***RECOMMENDATION 2***
> *The Board for Professional Occupational Regulation (BPOR) should review the need for continued regulation of soil scientists, waste management facility operators, and landscape architects* [emphasis added]. *In carrying out these reviews,* ***BPOR should follow the guidelines set in § 54.1-311 of the Code of Virginia for determining the need for regulation and the appropriate degree of regulation*** *for an occupation. BPOR should begin reporting its evaluation findings to the General Assembly by December 31, 2019 and complete these evaluations by December 31, 2020. (Chapter 2)*

The JLARC report asked whether or not "*a less restrictive voluntary certification program"* could possibly protect public health, safety, and welfare. Section 6.0, along with the preceding sections, responds to Virginia Code § 54.1-311 *Degrees of regulation,* an analysis for determining the need for the appropriate degree of regulation for a profession or occupation.(https://law.lis.virginia.gov/vacode/title54.1/chapter3/section54.1-311/):

Virginia Code § 54.1-311 *Degrees of regulation*

> B. In determining the proper degree of regulation, if any, the Board shall determine the following:
>
> 1. Whether the practitioner, if unregulated, performs a service for individuals involving a hazard to the public health, safety or welfare.
> 2. The opinion of a substantial portion of the people who do not practice the particular profession, trade or occupation on the need for regulation.
> 3. The number of states which have regulatory provisions similar to those proposed.
> 4. Whether there is sufficient demand for the service for which there is no regulated substitute and this service is required by a substantial portion of the population.
> 5. Whether the profession or occupation requires high standards of public responsibility, character and performance of each individual engaged in the profession or occupation, as evidenced by established and published codes of ethics.
> 6. Whether the profession or occupation requires such skill that the public generally is not qualified to select a competent practitioner without some assurance that he has met minimum qualifications.
> 7. Whether the professional or occupational associations do not adequately protect the public from incompetent, unscrupulous or irresponsible members of the profession or occupation.
> 8. Whether current laws which pertain to public health, safety and welfare generally are ineffective or inadequate.
> 9. Whether the characteristics of the profession or occupation make it impractical or impossible to prohibit those practices of the profession or occupation which are detrimental to the public health, safety and welfare.

10. Whether the practitioner performs a service for others which may have a detrimental effect on third parties relying on the expert knowledge of the practitioner.

6.1 Response to the Code of Virginia Criteria Used to Determine Level of Regulation

Listed below are responses to the questions and criteria contained in Virginia Code § 54.1-311 *Degrees of regulation.*

CRITERIA 1.
Whether the practitioner, if unregulated, performs a service for individuals involving a hazard to the public health, safety, and welfare.

Response:
The General Assembly of Virginia determined that it was in the public interest to license landscape architects as the unregulated practice of the profession or occupation can harm or endanger the health, safety, and welfare of the public. Landscape architectural practitioners are currently licensed by the Commonwealth of Virginia, and by 51 additional jurisdictions. As identified throughout this white paper, the potential for harm is recognizable and not remote or dependent upon tenuous argument.

For in-depth discussions of how the scope of practice of landscape architects involves substantial potential hazards to public health, safety, and welfare. See white paper sections:

- *2.0 Landscape Architects Protect Public Health, Safety, and Welfare*
- *3.0 Landscape Architecture and Landscape Design—Key Differences*
- *4.0 How the Practice of Landscape Architects Overlaps with the Practice of Architects and Engineers*

Excerpt from Section *2.0 Landscape Architects Protect Public Health, Safety, and Welfare*:

> Landscape architecture affects public health, safety, and welfare through design, analysis, management, and stewardship of the natural and built environment. **The fundamental practice of landscape architecture includes keeping the public safe from hazards, protecting natural resources, sustainably managing the natural and built environment, and enhancing social, economic, cultural, and physical functioning, now and in the future.** Due to the health, safety, and welfare impact of the profession, landscape architects are licensed in 52 jurisdictions.
>
> Licensure is a critical state function for protecting the public from unqualified or incompetent individuals who engage in professional practice. Landscape architects undertake work on a daily basis involving protection of the health, safety, and welfare of the public. **As with other design professions, including civil engineering and architecture, landscape architects have the potential to cause serious injury or death to users of technically designed public and private spaces.** The potential for injury and death exists and is inherent within the practice of landscape architecture as demonstrated by the scope of practice and potential for harm.
>
> Landscape architecture is a technically involved profession, affecting both complex systems in the built and natural environments**. The profession affects the health, safety, and welfare of individual consumers, large institutional clients, and the general public who use the spaces designed by landscape architects. Landscape architecture design and development falls into the key categories of transportation, commercial, industrial, residential, public and environmental projects. Specific project types include site design, highway design, pedestrian walkways, wetland construction and mitigation, park and trail systems, erosion control, stormwater management, mitigation and/or prevention impacts of flooding and sea level rise, mine reclamation, and community master plans**.

For specific cases of physical and financial harm, see ***Landscape Architecture Licensing Handbook: Ensuring Safe, Healthy, and Resilient Natural and Built Environments*, Produced by: Josh Sundloff, JD, ASLA. Produced for: The American Society of Landscape Architects. Original Creator and Contributor: Alex P. Schatz, JD, January 2017**, transmitted to BPOR under separate cover.

Excerpt from the *Landscape Architecture Licensing Handbook* Executive Summary [emphasis added]:

> "The purpose of this document is to educate and describe the importance and necessity of landscape architecture licensure through findings of empirical evidence of harm caused by incompetent landscape architectural work, which includes everything from the nuisance of repeated minor injuries all the way up to such things as permanent injury and death. In pursuit of that purpose, this document explains the justifications and reasons why landscape architecture is a licensed profession in all 50 states. This document also **particularly illustrates the profession's direct impact on the health, safety, and welfare of the public**. Numerous past reviews of the subject have found that regulation of the profession of landscape architecture is indeed necessary to protect the public from both physical and monetary harm—irreparable harm in some cases. Other reviews of the profession have highlighted the need for a comprehensive presentation of the evidence related to the potential for harm in landscape architecture practice. This document will attempt to fulfill that need."

CRITERIA 2
The opinion of a substantial portion of the people who do not practice the particular profession, trade, or occupation on the need for regulation.

Response:
In 1991, during a review by the Governor Wilder administration of certified professions, the Virginia Chapter of the American Society of Landscape Architects received copies of numerous letters supporting the licensure of landscape architects that were transmitted to the Department of Professional and Occupational Regulation (then called the Department of Commerce). In 1999, during BPOR's last study of the regulatory status of landscape architects, letters were sent by architects, professional engineers, land surveyors, planners, local, state, and federal government officials, developers, and others to BPOR supporting licensure of landscape architects. Typically, the letters cited the critical and unique role of landscape architects in the shaping of public and private site development for public benefit and the role of landscape architectural practice in protecting public health, safety, and welfare.

Selected examples of support of allied professionals, clients, and government officials include the following excerpts from letters of support [emphasis added]:

Thomas D. Rust, Professional Engineer, AICP, March 1991
"As a corporate officer of a major multi-disciplinary design firm [Patton, Harris, Rust and Associates], the mayor of the Town of Herndon, Virginia, a registered professional engineer, and a certified planner, I feel compelled to write to you to bring to your attention my personal and professional association and respect for the landscape architecture profession. Throughout my more than 20 years of experience, Landscape Architects have played vital roles in numerous types and scales of projects**. If the practice of landscape architecture was not regulated, the health, safety, and welfare of the public would be endangered**."

J. S. Hodge, Chief Engineer, Virginia Department of Transportation, March 1991
Speaking for then-VDOT Commissioner Ray D. Pethel, Mr. Hodge indicated:
"The landscape architecture profession, like engineering and architecture professions, generates design that could have a dramatic effect on the safety of the public."

Anthony Arnold, Professional Engineer, Director of Facilities, Planning, and Construction, Virginia Beach Public Schools, June 1999
"Poor design and improperly performed landscape architecture cannot only lead to economic damage, but could be a very real threat to the safety and well-being of the public; therefore, **I fully support the committee's efforts and recommend the licensure and regulation of landscape architects**."

R. Lewis Boggs, President, Property Investment Advisors, Inc., July 1999
"I have been involved in the development process for nearly thirty years. I have been engaged in the development of buildings owned by various ventures I sponsored and as a developer, on fee basis, for universities, major corporations and quasi-governmental organizations. The total value of those buildings exceeds $200,000,000. **I support the concept of having people who practice this profession be licensed in the State of Virginia**."

M. David Jester, President, Marlyn Development Corporation, June 1999
"**I wholeheartedly support the initiative to require the licensing of Landscape Architects**. As the president of a general contracting company and partner in over $100 million of real estate developments throughout Virginia and North Carolina I consider landscape design to be a critical part of the building and development process. When building for our own account or that of a client, the site plan and related details play a very important role in the overall success and acceptance within a community."

Joseph N. Morgan, Pulaski County Administrator, July 1999
"**Please accept this letter as support of the licensing, rather than the current certification, of professional landscape architects.** As a Virginia county administrator for the past 22 years, I have seen extensive public benefit from the services offered by landscape architects. I believe it would be beneficial for the Commonwealth that the designation as a landscape architect not be assumed by unqualified individuals. In the communities I have served, landscape architects have positively influenced the well-being of the overall community, including the following:

- protection/preservation of sensitive environments/habitats
- land analysis and evaluation
- appropriate land use/selection
- stormwater management
- safe and proper construction detailing
- sensitive and efficient land planning
- safe site development and circulation planning
- economic enhancement and development
- health benefits associated with recreation
- psychological benefits associated with "quality of life"
- enhancement of the visual quality of communities"

Paul L. Baldino, Director, Fairfax County Park Authority, July 1999
"Within our Planning and Development Division a staff of landscape architects provide project management for park development, including the preparation of plans and specifications and the overseeing of construction. They are also responsible for supervision of consultant design firm contracts that include architects, engineers, and landscape architects**. Fairfax County Park Authority supports the licensure of landscape architects in Virginia**. This is a way to ensure the safety and welfare of citizens as they use recreational facilities designed and constructed under the supervision of landscape architects."

R. Lance Terpenny, Christiansburg Town Manager, July 1999
"The Town of Christiansburg is one of the fastest growing towns in the Commonwealth, and has been for some time now. As such, we see site development plans from civil engineers, architects, landscape architects, and a host of other "designers." **My experience as the reviewing and approving authority of these plans has provided me with the insight that professional landscape architects possess the knowledge, skills, and abilities to practice site development planning and through proper licensure would ensure that the health, safety, and welfare of the public are foremost in these designs.** Landscape architects have, without a doubt, become very active in land use issues, including site selection, storm water management, traffic flow, and construction detailing to mention a few. To require professional licensure of landscape architects could only benefit the citizens of Virginia by protecting the natural resources while supporting and managing the growth of our localities. I encourage you to support full licensure of landscape architects and to regulate the profession."

Robert J. Scott, Virginia Beach Planning Director, June 1999
"**I am writing to you to express my feelings for the importance of the landscape architecture profession in contributing to the health, safety, and welfare of our community in Virginia Beach**. We have turned an

important corner in Virginia Beach, and in recent years landscape architects have been effective in helping to create the spaces and design communities that will provide the city with enduring quality. Among the characteristics necessary for our citizens to enjoy living here is a sense of place, identity, and relief from strictly engineered environments. Landscape architects have been a critical resource in bringing this important change."

In addition to the letters supplied by allied professionals, clients, and government officials, the public also supports licensure for highly technical professions. The Alliance for Responsible Professional Licensing (ARPL) (http://www.responsiblelicensing.org) has released new opinion research measuring public attitudes on deregulation of professional licensing. The results of the 2019 national survey indicated widespread public support for maintaining rigorous professional licensing standards for professions that have a clear impact on public health, safety, and welfare, including landscape architecture.

The survey, conducted by Benenson Strategy Group, yielded these key findings:

- Seventy-five percent of voters believe that it is important to ensure qualifications for professionals in certain industries. A majority of voters believe that current professional licensing requirements protect the public and should not be reformed.
- More than seventy percent of voters believe that regulating professionals in accounting, engineering, architecture, landscape architecture, and related fields with high impact on public safety and welfare is important.
- Seventy-one percent of voters believe professional licensing should be required unless it can be proven that eliminating licensing will not have a negative impact on public health and safety.
- Sixty-seven percent of voters believe that consumers are best protected by a system that regulates education, examination and experience standards—all of which are overseen by a professional licensing board.

CRITERIA 3
The number of states which have regulatory provisions similar to those proposed.

Response:
Landscape architecture involves substantial protection of public health, safety, and welfare, and currently 47 states, the District of Columbia, Puerto Rico, and the Commonwealth of the Northern Mariana Islands license landscape architects and regulate practice and title. Maine and Massachusetts license landscape architects and regulate title. Illinois sunset renewal legislation to reinstate licensing of landscape architects and regulate title is pending before the Illinois state legislature.

Provided below are the definitions of the practice of landscape architecture in the state codes for states and jurisdictions abutting the Commonwealth of Virginia. The definitions are comparable to how the practice of landscape architecture is defined in the Code of Virginia, and through interpretations of the Code of Virginia by resolutions passed and issued by the APELSCIDLA Board.

District of Columbia:
(https://code.dccouncil.us/dc/council/laws/21-249.html)

> **(a)** For the purpose of this part, the term "practice of landscape architecture" means rendering or offering to render services, including consultation, evaluation, planning, and preparation of studies, designs, specifications, and other technical submissions, in connection with the development of land areas where, and to the extent that the dominant purpose of such services is preservation, enhancement, or determination of proper land uses, natural land features, ground cover and planting, naturalistic and aesthetic values, the settings, approaches or environment for structures or other improvements, grading and drainage and the consideration and determination of inherent problems of the land relating to the erosion, wear and tear, blight or other hazards, and the administration of contracts relative to projects principally directed at the functional and aesthetic use of land, and the location and arrangement of such tangible objects and features as are incidental and necessary to the purposes outlined in this section. The term "practice of landscape architecture" does not include the design of structures or facilities with separate and self-contained

purposes such as are ordinarily included in the practice of engineering or architecture or the making of land surveys or final land plats for official approval or recording.

Maryland:
(http://mgaleg.maryland.gov/mgawebsite/Laws/StatuteText?article=gbo&section=9-101&enactments=false)

(j) (1) "Practice landscape architecture" means:
(i) to provide any service or creative work in the analysis or design of land and natural resources that requires training and experience in the application of the biological, physical, mathematical, and social sciences; and
(ii) to perform design coordination of a project or portion of a project provided that the licensed landscape architect holds a current license issued by the Board and has adequate education and experience in, and understanding of, the project or portion of the project being coordinated.
(2) "Practice landscape architecture" includes:
(i) consultation, research, analysis, assessment, selection, and allocation of land and natural resources;
(ii) development of graphic, written, digital, and other appropriate criteria to govern the planning and design of land development and construction programs, including:
1. preparation, review, and analysis of master plans, site plans, and land development plans;
2. reconnaissance, planning, design, and preparation of construction documents;
3. construction, observation, administration, and project management;
4. preservation, restoration, conservation, reclamation, rehabilitation, and management of land and natural resources;
5. preparation of feasibility and site selection studies, environmental studies, and cost estimate reports; and
6. design and analysis of grading and drainage, irrigation, erosion and sediment control systems, and pedestrian and vehicular circulation systems; and
(iii) in conjunction with site plan preparation, the performance of the following:
1. determining a grade;
2. determining drainage; and
3. preparing and designing stormwater drainage systems provided that the preparation and design:
A. are in accordance with design manuals, details, and standards accepted by the State or local authorities; and
B. do not require a hydraulic or structural design of system components.

North Carolina:
(https://www.ncasla.org/practice-la)

(3) Landscape architecture or the practice of landscape architecture. - The performance of services in connection with the development of land areas where, and to the extent that the dominant purpose of the services is the preservation, enhancement or determination of proper land uses, natural land features, ground cover and planting, naturalistic and aesthetic values, the settings, approaches or environment for structures or other improvements, natural drainage and the consideration and determination of inherent problems of the land relating to the erosion, wear and tear, blight or other hazards. This practice shall include the preparation of plans and specifications and supervising the execution of projects involving the arranging of land and the elements set forth in this subsection used in connection with the land for public and private use and enjoyment, embracing the following, all in accordance with the accepted professional standards of public health, safety and welfare:

a. The location and orientation of buildings and other similar site elements.

b. The location, routing and design of public and private streets, residential and commercial subdivision roads, or roads in and providing access to private or public developments. This does not include the preparation of construction plans for proposed roads classified as major thoroughfares or a higher classification.

c. The location, routing and design of private and public pathways and other travelways.

d. The preparation of planting plans.

e. The design of surface or incidental subsurface drainage systems, soil conservation and erosion control measures necessary to an overall landscape plan and site design. (1969, c. 672, s. 1; 1997-406, s. 1; 2001-496, s. 12.1(a).)

West Virginia:
(https://www.wvlegislature.gov/WVCODE/ChapterEntire.cfm?chap=30&art=22&section=4)

(m) "Practice of landscape architecture" means the performance of professional services, including but not limited to, analysis, consultations, evaluations, research, planning, design, management or responsible supervision of projects principally directed at the functional, aesthetic use, preservation and stewardship of the land and natural and built environments, including:

(1) Investigation, selection and allocation of land and water resources for appropriate uses;

(2) Formulation of feasibility studies and graphic and written criteria to govern the planning, design and management of land and water resources;

(3) Preparation, review and analysis of those aspects of land use master plans, subdivision plans and preliminary plats as are related to landscape architecture;

(4) Determination of the location and siting of improvements, including buildings and other features, as well as the access and environs for those improvements associated with the practice of landscape architecture;

(5) Design of landforms, soil conservation and erosion control methods, site lighting, water features, irrigation systems, plantings, pedestrian and vehicular circulation systems and related construction details, and natural drainage, surface and ground water drainage systems: Provided, That such systems do not require structural design of system components or a hydraulic analysis of the receiving storm water conveyance system; and

(6) Preparation, filing and administration of plans, drawings, specifications and other related construction documents.

CRITERIA 4
Whether there is a sufficient demand for the services which there is no regulated substitute and this service is required by a substantial portion of the population.

Response:
There is no regulated substitute for licensing landscape architectural practice.
The highly specialized and fully integrated education, training, and experience requirements unique to landscape architecture are what private companies, government agencies, institutions, and others seek when selecting professionals to design all types of land development projects and to conserve and manage historic landscapes and natural systems. Landscape architects are best qualified to undertake landscape architectural design. While practice overlap or incidental practice exists between landscape architects, engineers, and architects, the landscape-related

education, training, experience, and examination of the other regulated design professions is not equal or comparable to the education, training, and examination of landscape architects. Landscape architects undertake the shaping of the public realm through site planning and site design—informed by education, training, and experience requirements that blend the disciplines of architecture, engineering, earth sciences, horticulture, ecology, and the behavioral sciences. Additional evidence to support this criterion can be found in:

- *Section 2.0 Section Landscape Architects Protect Public Health, Safety, and Welfare;*
- *Section 3.0 Landscape Architecture and Landscape Design—Key Differences; and*
- *Section 4.0 How the Practice of Landscape Architects Overlaps with the Practice of Architects and Engineers*

Landscape architectural services are required by a substantial portion of the population.
Landscape architects provide site planning, master planning, and site design through construction administration services for almost every type of public and private land development project within the Commonwealth. Landscape architects provide professional design services for the following types of urban, suburban, and rural landscapes frequented by the public:

- Transportation Development
- Infrastructure Development
- Retail Development
- Office Development
- Commercial and Industrial Development
- Housing and Community Development
- Residential Development
- Educational Development
- Institutional Development
- Park and Recreational Development
- Open Space Systems
- Natural Resource Conservation and Rehabilitation
- Historic Landscape Preservation and Rehabilitation

CRITERIA 5
Whether the profession or occupation requires high standards of public responsibility, character, and performance of each individual engaged in the profession or occupation, as evidenced by established codes of ethics.

Response:
Landscape architects in Virginia follow and abide by the highest standards of professional ethics and conduct. Virginia landscape architects must comply with 18 VAC Chapter 20, *Board for Architects, Professional Engineers, Land Surveyors, Certified Interior Designers, and Landscape Architects Regulations.* Section 18VAC10-20-690, *Responsibility to the Public,* which directly addresses the requirement for high standards of public responsibility, character, and performance:

> **18VAC10-20-690. Responsibility to the Public.**
> The primary obligation of the regulant is to the public. The regulant shall recognize that the health, safety, and welfare of the general public are dependent upon professional judgments, decisions, and practices. If the judgment of the regulant is overruled resulting in circumstances when the health, safety, or welfare of the public is endangered, the regulant shall inform the employer, client, and appropriate authorities in writing of the possible consequences.
> https://law.lis.virginia.gov/admincode/title18/agency10/chapter20/section690/

Other sections of 18VAC Chapter 20 that address the requirement for high standards of public responsibility, character, and performance include:

> 18VAC10-20-700. *Public Statements.*
> https://law.lis.virginia.gov/admincode/title18/agency10/chapter20/section700/
>
> 18VAC-10-20-710. *Conflicts of Interest.*
> https://law.lis.virginia.gov/admincode/title18/agency10/chapter20/section710/
>
> 18VAC-10-20-720. *Solicitation of Work or Employment.*
> https://law.lis.virginia.gov/admincode/title18/agency10/chapter20/section720/
>
> 18VAC-10-20-730. *Competency for Assignments.*
> https://law.lis.virginia.gov/admincode/title18/agency10/chapter20/section730/
>
> 18VAC10-20-740. *Professional Responsibility.*
> https://law.lis.virginia.gov/admincode/title18/agency10/chapter20/section740/
>
> 18VAC10-20-750. *Good Standing.*
> https://law.lis.virginia.gov/admincode/title18/agency10/chapter20/section750/

Additionally, for over 120 years, landscape architect members of the American Society of Landscape Architects (ASLA) must abide by ASLA's Codes and Guidelines for Professional Conduct and ASLA's Code of Environmental Ethics. This path begins with professional practice coursework and student ASLA membership as part of accredited university degree programs, and is followed by membership in the ASLA, ASLA state chapters, and ongoing professional development. Landscape architecture codes and guidelines are comparable with those of architectural and engineering professional associations.

The ASLA Code of Professional Ethics includes two canons:

> Canon I covers *Professional Responsibility*
> https://www.asla.org/ContentDetail.aspx?id=4276#cn1
>
> Canon II covers *Member Responsibilities*.
> https://www.asla.org/ContentDetail.aspx?id=4276#cn2

The preamble of the *ASLA Code of Professional Ethics* states:

> "The profession of landscape architecture, so named in 1867, was built on the foundation of several principles – dedication to the public health, safety, and welfare and recognition and protection of the land and its resources. These principles form the foundation of the American Society of Landscape Architects (ASLA) Code of Professional Ethics (the Code) as well.
>
> The Code applies to the professional activities of all ASLA professional members, i.e., Full Members, Associate Members, and International Members (herein, referred to simply as Members), and contains important principles relating to the duties of Members to clients, employers, and employees and to other Members of the Society.
>
> The Code is arranged so that each Canon contains Ethical Standards – essentially goals that Members should strive to meet. Some of the Ethical Standards contain objective Rules. Violation of Rules might subject an ASLA Member to a complaint, while violation of Ethical Standards will not. Therefore, the word "should" be used in the Ethical Standards and "shall" is used in the Rules.
>
> The policies established by the Board of Trustees relative to environmental stewardship, quality of life, and professional affairs are summarized in the ASLA Code of Environmental Ethics.

> Members should make every effort to enhance, respect, and restore the life-sustaining integrity of the landscape and seek environmentally positive, financially sound, and sustainable solutions to land use, development, and management opportunities."

Additionally, ASLA members must abide by a Code of Environmental Ethics.
https://www.asla.org/ContentDetail.aspx?id=4308

The preamble of the *ASLA Code of Environmental Ethics* is also relevant:

> "Members of the American Society of Landscape Architects (ASLA) should make every effort within our sphere of influence to enhance, respect, and restore the life-sustaining integrity of the landscape for all living things.
>
> Members should work with clients, review and approval agencies, and local, regional, national, and global governing authorities to educate about, encourage, and seek approval of environmentally positive, financially sound, and sustainable solutions to land-use, development, and management opportunities.
>
> The following tenets are the basis of the ASLA Code of Environmental Ethics:
>
> - The health and well-being of biological systems and their integrity are essential to sustain human well-being.
> - Future generations have a right to the same environmental assets and ecological aesthetic as presently exist.
> - Long-term economic survival is dependent upon the natural environment.
> - Environmental stewardship is essential to maintain a healthy environment and a high quality of life for the earth."

Given that landscape architects are not obligated to become members of ASLA, it is only through licensure that the public will be assured that all landscape architects will perform their work with a primary obligation for the protection of the public health, safety, and welfare, and ethical and responsible practice.

CRITERIA 6
Whether, the profession or occupation requires such skill that the public generally is not qualified to select a competent practitioner without some assurance that he has met minimum qualifications.

Response:
There is an important distinction between highly complex, technical professions and the trade and vocational occupations that lawmakers commonly cite to defend weakening licensing requirements. The very nature of a technical profession makes it impracticable for consumers and the public who need these services to accurately assess the relative competence of an individual or firm. Consumers of professional services typically lack the expertise or resources—or both—to verify the qualifications of competing individuals and firms in the marketplace. Licensed landscape architects are vested with the responsibility to certify the quality and integrity of their work, and their sealing of site plans and technical and construction documents is a social contract with the client and the public. Because of this, they must meet rigorous educational requirements, undergo intensive examination, and participate in trainings on complicated codes and laws in order to perform their duties with integrity, quality, and reliability.

Landscape architects undertake a demanding education at the undergraduate and graduate levels, work under the direction of experienced landscape architects for a number of years prior to licensure, and complete a national four-part examination. Landscape architects must have knowledge, skills, and abilities involving ecological systems, hydrology, engineering, architecture, behavioral science, land use and zoning law, federal, state, and local environmental laws, accessibility laws, construction methods and processes, and building and construction codes. All of these knowledge, skills, and abilities are reflected in the practice of landscape architecture and the offering of professional services.

The general public cannot adequately judge the competency of landscape architects offering and undertaking landscape architectural design services that are informed by the highly specialized and fully integrated education, training, and experience requirements unique to landscape architects. In addition, the general public cannot adequately judge the competency of landscape architects that serve as the lead consultant coordinating and managing design teams involving architects, engineers, scientists, planners, and other subconsultants. Average citizens cannot be expected to have adequate knowledge to protect themselves from improper practice without the APELSCIDLA Board attesting landscape architectural competency through licensure.

Furthermore, other highly technical professions—including architects and engineers—in the design and construction industries are dependent upon the knowledge, skills, and abilities of landscape architects and are not in a position to evaluate the work of landscape architect involved in the interrelated ramifications of land and site development. Architects and engineers support landscape architecture licensure because they know that landscape architects need to be competent and able to take professional responsibility for the services they provide.

With landscape architects providing complex services that require highly technical skills, rather than quantifiable goods, it is difficult at best for perspective clients to evaluate the quality of the work. The public is especially vulnerable to various manifestations of improper practice whose consequences may not become evident until sometime well after the service has been rendered. Additional evidence to support this criterion can be found in:

- *Section 2.0 Landscape Architects Protect Public Health, Safety, and Welfare*
- *Section 3.0 Landscape Architecture and Landscape Design—Key Differences*
- *Section 4.0 How the Practice of Landscape Architects Overlaps with the Practice of Architects and Engineers*

CRITERIA 7
Whether the professional or occupational associations do not adequately protect the public from incompetent, unscrupulous, or irresponsible members of the profession or occupation.

Response:
Landscape architects are not required to be members of the American Society of Landscape Architects (ASLA). Though a large percentage of Virginia landscape architects are members of the ASLA, some landscape architects choose not to be members.

Whereas full membership in the American Institute of Architects (AIA) requires that the member hold a state-issued license, the same is not true for full membership in ASLA. When the public sees "AIA" behind a person's name, the designation means that the person is a full member of the AIA and is a licensed architect. When the public sees "ASLA" behind a person's name, the designation means that the person is a full member in ASLA. However, that person may not be a licensed landscape architect.

Licensure also ensures that professional licensing boards are responsible for protecting the public by establishing responsible licensing standards, ensuring compliance with those standards, and sanctioning bad actors. Those who serve on a licensing board are charged with: (1) overseeing and enforcing the laws enacted by the legislature to ensure a profession is adhering to standards that fulfill its public protection mandate, and (2) preserving the credibility, validity, and reliability of the license they represent. The responsibilities of licensing boards and members are well outside the jurisdiction of associations for highly complex, technical professions.

Should the regulatory status of landscape architects be reduced to voluntary certification, there would be no national-, state-, or local-level authorities overseeing the practice of landscape architecture by non-certified landscape architects. There would be no governing authority responsible for prohibiting individual non-certified landscape architects from improperly practicing landscape architecture. Under a voluntary title-only regulatory status, non-certified landscape architects, working individually or in small-office environments, could practice landscape architecture without the possibility of scrutiny or oversight by other professionalsor the Virginia Department of Professional and Occupational Regulation. Simply put, anyone with no landscape architectural education, training, experience, whose competency is not established through examination, could hold themselves out as landscapes architects, thus putting the public at great risk.

CRITERIA 8
Whether current laws which pertain to public health, safety, and welfare generally are ineffective or inadequate.

Response:
Relying solely on construction and contract laws, zoning and land development ordinances, and building codes to protect the public is impossible. Therefore, the Commonwealth licenses design professionals, including landscape architects. Licensing of design professionals protects consumers and the public by ensuring a baseline level of proven qualification and expertise for those who design spaces and buildings that impact public health, safety, and welfare.

In addition, using the courts as a substitute for regulation is infused with uncertainty and would not necessarily serve as an adequate means for deterring improper practice. And, in most cases of improper practice addressed through legal actions and the courts, significant harm to public health, safety, and/or welfare would likely have occurred prior to legal actions. Therefore, one of the main purposes of regulating a profession is to limit harm to the public by requiring professionals to meet basic requirements of education, experience, and testing. The Alliance for Responsible Professional Licensing (ARPL) public opinion research also found that voters disapprove of proposals that replace proven qualifications on the front end with free market consequences such as a bad review or a lawsuit after something goes wrong. Some things are too important to be left for market correction after the fact.

CRITERIA 9
Whether the characteristics of the profession or occupation make it impractical or impossible to prohibit those practices of the profession or occupation which are detrimental to the public health, safety, and welfare.

Response:
Whether addressing landscape architecture, architecture, engineering, or land surveying, it is simply impossible to outlaw bad or improper practice. As indicated in the response to Criteria 8 above, the Commonwealth licenses design professionals because it is impossible to rely solely on construction and contract laws, zoning and land development ordinances, and building codes to protect the public.

Additionally, landscape architects structure their practice in a variety of ways that make it impractical to prohibit improper practice in any other manner other than licensure. Many landscape architects, like many architects, are involved in one-person and two-person firms, practicing as sole-proprietors or partners. These business structures involve direct contact, through contracting, with the public. In this case, the client, who may have little or no knowledge of the practice of landscape architecture, works directly with the landscape architect with little or no independent sources of information on the practice of landscape architecture. The client is fully dependent on the stated or implied qualifications of the landscape architect and with the client's understanding that they and the public are minimally protected from improper practice because landscape architects are required to be licensed by the Commonwealth.

CRITERIA 10
Whether the practitioner performs a service for others which may have a detrimental effect on the third parties relying on the expert knowledge of the practitioner.

Response:
The public has a stake in professional licensing and the public interest must be considered—especially for highly complex, technical professions that directly impact public health, safety, and welfare. Millions of Virginians and visitors to Virginia routinely access and use sites and places designed in whole or part by landscape architects. However, how does one know or understand how to evaluate whether a park, streetscape, playground, boardwalk, hiking and biking trail, school grounds, or office plaza is safe? The simple answer is: They don't.

The average person does not have the knowledge to determine whether or not the public or private site they are accessing and using was properly designed. Instead, they "trust" that these places and sites were designed by people

with the knowledge, skills, and abilities to ensure their health and safety. Citizens rely on licensed professionals, like landscape architects, to ensure the integrity and safety of Virginia's public and private spaces.

As stated under Criteria 6, other highly technical professions—including architects and engineers—in the design and construction industries are dependent upon the knowledge, skills, and abilities of landscape architects and are not in a position to evaluate the work of landscape architects involved in the interrelated ramifications of land and site development. Architects and engineers support landscape architecture licensure because they know that landscape architects need to be competent and able to take professional responsibility for the services they provide.

As outlined earlier, landscape architects design the settings, approaches, and environs of buildings, structures, and facilities; they design the environs of roads, parkways, and transportation facilities; and they design the land and water resources where Virginians live, work, and play. All of these places, if improperly designed by persons without the needed education, training, and experience, and whose competency is not established through examination, can and has resulted in harm to the public. Collectively, the places and sites designed by landscape architects, whether rural, suburban, or urban; industrial, commercial or residential, private or public; play a major role in the health, safety, and welfare of the population and of Virginia's built and natural environments. The public has come to rely on a safe and healthy Virginia, regardless of whether or not they understand the role and impact that landscape architects have in making the sites and places of their state safe and accessible for all.

Appendix A

Scope of the Profession of Landscape Architecture

WHAT IS LANDSCAPE ARCHITECTURE?

DESIGN: About Landscape Architecture

Landscape architecture translates as the design of almost anything under the sky. Think of iconic places like New York City's Central Park and the FDR Memorial in Washington, D.C. But also consider your downtown square, your local park, or even your own backyard. Green roofs, urban farms, corporate campuses—all define landscape architecture.

Landscape architecture covers a huge spectrum, perhaps best understood by the profession's mantra: achieving a balance between the built and natural environments. It requires a multidisciplinary approach involving environmental science, art, ecology, and much more, leading to extraordinary results: restoring endangered wetlands, reducing hospital stays, securing government and other buildings, removing toxins from rainwater. These aren't pie in the sky. It's what landscape architects are designing right now.

Here are just a few of the project types covered by landscape architecture:

School and college campuses
Corporate and commercial grounds
Public gardens and arboreta
Historic preservation and restoration
Hotels, resorts, golf courses
Hospital and other facility sites
Interior landscapes
Land planning
Landscape art and earth sculpture
Monument grounds
Parks and recreation
Land reclamation and rehabilitation
Residential sites
Security design
Streetscapes and public spaces
Therapeutic gardens
Transportation corridors and facilities
Urban and suburban design
Water resources

New York City's Highline *Photo: Iwan Baan*

DESIGNERS: About Landscape Architects

Landscape architects typically hold a bachelor's or master's degree in landscape architecture, covering a broad spectrum of design, science, and technical know-how. Topics include site design, historic preservation, planning, grading and drainage, horticulture, and even subjects like psychology. All 50 states require landscape architects to earn a license to practice. This not only involves earning a university degree, but usually several years of work experience, passing of a rigorous exam, and taking continuing education courses.

It's easy to confuse landscape architects with other landscape professionals, but the difference is straightforward. Landscape architects design, often working with landscaping or other construction companies to install those designs. Think of the fashion designer imagining an outfit while a clothing manufacturer makes the apparel, or an artist designing a wall poster that's printed by another company. Landscape architects and contractors are complementary but highly distinct professions.

LANDSCAPE ARCHITECTURE
Your Environment. Designed.

Learn more at asla.org/design

WHAT IS LANDSCAPE ARCHITECTURE?

DESIGNING: How Landscape Architecture Happens

Design isn't as simple as just breaking out a sketch pad or loading computer design software. Creating the spaces we use to live, work, and play requires many steps—especially for larger-scale landscape architecture projects.

Learning the Landscape

Design starts here. Landscape architects need to know what they're getting into and what the client needs. The designers speak with the client, visit the proposed site, conduct an analysis of its history, research possible uses, and, depending upon the project type (especially if it's a public project like a park), solicit input from the community.

Concepts

Will a park include an amphitheater or an athletic field? Should the space use a green roof, water system, or solar panels? Landscape architects use initial drawings or 3-D models to propose the big ideas. If it's a large public project, there may be more opportunity for public feedback.

TOP: Houston's Buffalo Bayou Promenade *Photo: Tom Fox*
BOTTOM: Chicago's Gary Comer Youth Center Roof Garden *Photo: Scott Shigley*

Nueva School, Hillsborough, California *Photo: Marion Brenner*

Designing

Instead of simply proposing a green roof, now the drawings or computer models will include the exact look of the green roof. Many projects require a series of drawings to cover the whole project, all brought together into a final master plan for the client to approve. From there, a whole new set of construction drawings covers the minutiae of exactly what type of materials to use and where each individual plant, stone, fountain, or bench should go.

Breaking Ground and Beyond

A landscape architect's job doesn't end with the final plan. The designers routinely visit the site, meet with the client, and work with the construction team to ensure all goes smoothly. After completion, landscape architects evaluate the success of the project and, depending on the client, continue to oversee management of the site post-construction. Many cities and counties have their own landscape architects on staff to manage all the parks and public land.

LANDSCAPE ARCHITECTURE
Your Environment. Designed.

Learn more at asla.org/design

LANDSCAPE ARCHITECTURE

Creating Healthy Places that Work for You

What is a healthy community?

It is a place where people work, socialize, play, create and develop.

How do public landscape architects create healthy places?

They collaborate with residents, businesses and governments to design places and infrastructure that promote healthy activities and lifestyles.

Peter Zoon/Wikimedia Commons/Creative Commons

Frederick Law Olmsted is considered the founder of landscape architecture in the United States. Some of his most famous works are urban parks such as New York's Central Park, but he also designed numerous estates, neighborhoods, roadways, and regional park systems. The legacy of his work is the creation of places where people can access the mental and physical health benefits of greenspace as part of their daily living.

View some examples of what landscape architects can design to create environments that benefit you »

LANDSCAPE ARCHITECTURE

Creating Healthy Places that Work for You

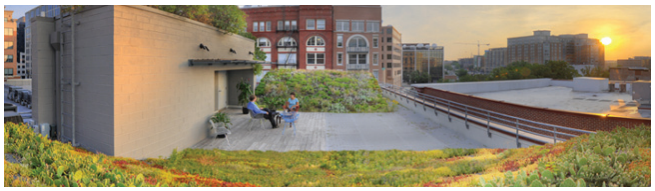
COMMUNITY PLANNING

Walkable and bike-friendly communities have health benefits that go beyond making walking and biking safer and more accessible. They reduce the need for auto-centric transportation, reduce paving, and mitigate higher temperatures and poor air quality in our cities.

City of Madison Parks Division

OPEN SPACE & GREEN INFRASTRUCTURE

Increasing open space and outdoor recreation areas in our communities increases our ability to interact with nature. Physical and mental health is improved when parks, gardens, local food, farmer's markets, permeable pavement, bioswales, and green roofs are accessible.



American Society of Landscape Architects

TRAILS & PARKS PLANNING

Using trail systems to link neighborhoods to parks and open spaces expands recreational options and increases the quality of life for urban and suburban dwellers.

Daybreak Utah

NEIGHBORHOOD DESIGN

The inclusion of parks and green spaces within close walking distance encourages exercise, movement, and healthy living. Similarly, initiatives such as Safe Routes to Schools provide street environments that are safe for our children to walk or bike to school and other destinations.

Daybreak Utah

How Do Public Landscape Architects Create Healthier Communities?

- Design neighborhoods and projects that encourage active living and connections with nature
- Plan our communities to ensure parks, open space and greenways are part of our cities and towns
- Encourage the design of safe streets and the development of infrastructure that encourages walking and biking
- Incorporate green infrastructure such as permeable paving, rain gardens and street trees into our cities

These are just a few of the ways landscape architects can make a safe, healthy, and more sustainable community.

LANDSCAPE ARCHITECTURE

Your Environment. Designed.

This document was prepared by the Public Practice Advisory Committee of the American Society of Landscape Architects

LANDSCAPE ARCHITECTURE

Planning, Designing & Managing Spaces That Move You

What Moves Do Landscape Architects In Transportation Make?

Transportation Landscape Architects focus on enhancing people's quality of life through integration of transportation facilities with communities and the environment by contributing scientific, aesthetic and communication expertise. They strive for excellence in design solutions for all modes of transportation, emphasizing safety, environmental protection, aesthetic and scenic quality, and integration of community values into transportation projects. They contribute to the development of transportation corridors, streets, bicycle and pedestrian routes, and public transit that is safe, functional, and beautiful.

Where Do Transportation Landscape Architects Work?

Transportation landscape architects work in private firms and public agencies such as the US Forest Service, National Park Service, State Departments of Transportation, Universities, Colleges, Non-Profits, and Resource Centers. They contribute to multi-disciplinary teams in the planning, design, construction, maintenance and operation of transportation systems that seek a balance between safety, aesthetics, mobility, and economics, and preserve and enhance the environment through sustainable solutions.

View examples designed by transportation landscape architects that create healthy and safe environments

Learn more at asla.org/design

LANDSCAPE ARCHITECTURE

Planning, Designing & Managing Spaces That Move You

SCENIC HIGHWAYS & BYWAYS

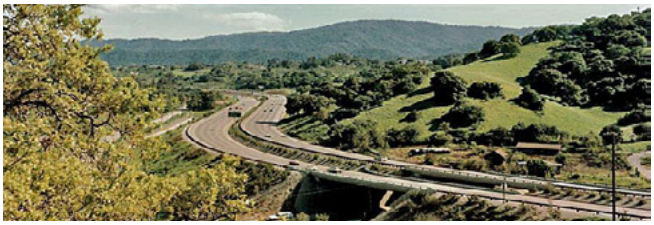
These programs contribute to the protection of scenic corridors of outstanding beauty that reflect important natural resources. Preserving scenery is essential to maintaining the landscape's scenic beauty and community character.

EROSION CONTROL & REVEGETATION

These solutions mitigate the impacts of transportation facilities on natural systems and land forms, and plant and animal communities. Highway and street improvements are designed to be artful, reduce stormwater pollution and erosion, and restore habitat connectivity.

VISUAL IMPACT ASSESSMENT

These assessments provide analysis of potential changes to the visual environment along highway corridors due to transportation projects. They document expected change, assess public reaction, create visual simulations, and provide solutions to mitigate negative impacts.



PLANTING & IRRIGATION

Planting integrates streets and roadways into the local settings. These features are designed to enhance the travelers' experience, improve safety and aesthetics, preserve scenic views, and optimize environmental mitigation.

How Do Transportation Landscape Architects Benefit Communities?

- Design projects that enhance quality of life
- Preserve and protect environmental resources
- Improve the function, safety, and appearance of transportation systems
- Engage communities to make thoughtful decisions on transportation choices in the environment

Make a difference in our future by moving people through healthy, sustainable and beautiful environmental designs

LANDSCAPE ARCHITECTURE

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LANDSCAPE ARCHITECTURE

Designing an Environment that Works for You

Green Infrastructure & Landscape Architecture

Landscape architects work with natural ecosystems to create sustainable environments. They do so through the design and development of green infrastructure.

Linda Oyama Bryan

Green infrastructure can be considered a conceptual framework for understanding the valuable services nature provides the human environment. Landscape architects use nature to manage water from storms, create new wildlife habitat, and make the built environment greener. At all scales, green infrastructure provides real ecological, economic, and social benefits.

View examples of landscape architects designing the environment to benefit you. »

Learn more at asla.org/design

LANDSCAPE ARCHITECTURE

Designing an Environment that Works for You

PARK SYSTEMS

Not only are park systems opportunities for physical exercise, recreation, social interaction, psychological renewal, and environmental education, they are also valuable carbon catchers and wildlife habitats. Governments, organizations, and communities should continue to invest in networks of parks and other open spaces as a remedy to long-term urban, suburban, and regional landscape decline.

Beijing Tsinghua Urban Planning & Design Institute

WILDLIFE HABITAT AND CORRIDORS

Putting landscape architects on the team ensures comprehensive land-use planning and design promoting the enhancement, protection, and management of landscapes that support wildlife. The future of wildlife and wildlife habitats in rural, suburban, and urban settings depends on an environmentally responsible strategy of land management that emphasizes a mix of spaces for people and wildlife. The use of ecological information in the design process can create a more positive union between land use and the natural environment, and increase public awareness of wildlife habitats and their value to human welfare.

Andrea Jones, Garden Exposures Photo Library

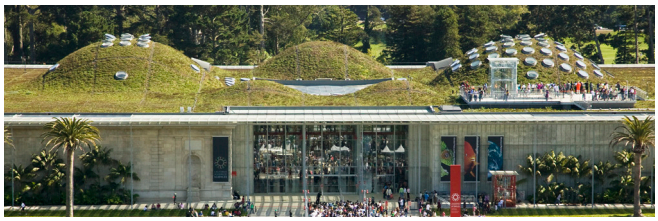
URBAN FORESTRY: A TREE CANOPY IN YOUR CITY

At the urban level, parks and urban forestry are central to reducing energy usage costs and creating clean, temperate air. The value of residential properties with trees and vegetation is 3 to 10 percent higher than properties without. And cities spending $15-65 per tree reported that they received total net environmental benefits ranging from $30-90 per tree.

Charles Mayer Photography

GREEN ROOFS & GREEN WALLS

Green roofs, walls, and other techniques within or on buildings bring a range of benefits, including reduced energy consumption and dramatically decreased stormwater runoff that costs cities billions to manage. Green infrastructure techniques absorb that water before it ever enters the storm system.



Tom Fox

Want more? View green infrastructure solutions at **asla.org/animations.**

LANDSCAPE ARCHITECTURE

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Learn more at asla.org/design

LANDSCAPE ARCHITECTURE

Preserving Landscapes that Teach us About our Past

Professional landscape architects and interested groups work to preserve landscapes every year. Historic landscapes such as gardens, farms, battlefields, scenic byways and parks are just some examples of "landscapes" that can be preserved for future generations to learn from and enjoy.

Historic Farmland and Battlefields of Shenandoah Valley

Preserved and historic landscapes exist at many scales; they can range from large tracts of land to a small front yard. They can be designed formal landscapes such as the Vanderbilt Garden in New York, as well as vernacular cultural landscapes such as the historic Shenandoah Valley.

View some examples of landscapes preserved with the help of landscape architects »

Learn more at www.nps.gov/oclp and www.asla.org

LANDSCAPE ARCHITECTURE

Preserving Landscapes that Teach us About our Past

CULTURAL LANDSCAPE PRESERVATION


Native American Village


El Camino Real, CA

Cultural landscapes have properties that represent the combined work of nature and of man. They can include both natural elements, such as vegetation and geoformations, as well as man-made features. The forms, features, and uses of cultural landscapes reveal much about the histories of places and people.

Like historic buildings, some cultural landscapes are worth preserving because they are important parts of our national heritage and connect people to places.

Cultural landscapes come in many different forms, including designed landscapes such as parks and gardens like Central Park or the Vanderbilt Gardens in New York. But cultural landscapes can also be vernacular landscapes, that is, landscapes which are shaped by how they are used. Vernacular landscapes such as a farm, rural village, or industrial complex teach us about the work and culture of the people who use them. Both designed and vernacular landscapes might also be historic landscapes—those which are significant for their association with historic events, people, persons, or ideas. A Civil War battlefield or a historic road, such as the El Camino Real, are good examples of historic landscapes.

HISTORIC GARDEN PRESERVATION


Vanderbilt Gardens, NY

LANDSCAPE PRESERVATION AND MAINTENANCE


Civil War Battlefield


Central Park, NY

Landscape architects make a difference by preserving cultural landscapes that show us how people's relationship with nature has changed over time

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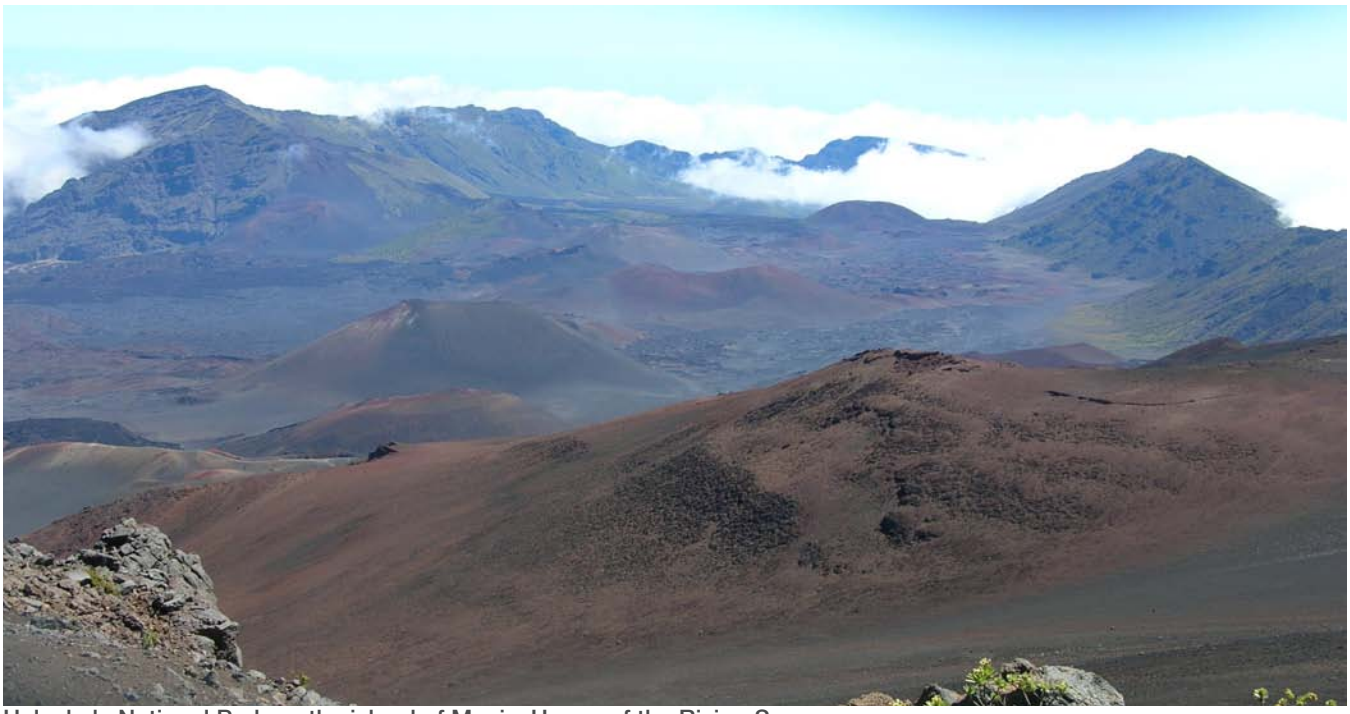
LANDSCAPE ARCHITECTURE

Rediscovering Your Landscapes

Landscape architects preserve and protect iconic landscapes by actively shaping public places and influencing policy at the national, state, regional, and local levels. They are called upon to resolve ecological and social issues through design, and often create bold ideas with exceptional results while meeting the demands of the changing world that surround and infiltrate our communities.



Haleakala National Park on the island of Maui – House of the Rising Sun

Landscape architects work on lands designated and protected as National Monuments, Wild and Scenic Rivers, Wilderness and Conservation Areas, National Forests, National Parks, and National Scenic Byways. By designing creative and interactive ways to engage people with these valued places, landscape architects promote stewardship and develop conservation strategies so that future generations will enjoy America's national treasures as much as we do today.

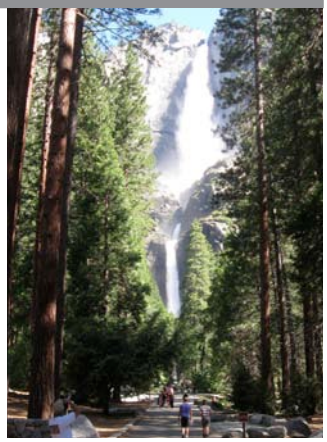
View some examples of natural and cultural treasures that landscape architects help protect and restore. »

LANDSCAPE ARCHITECTURE

Rediscovering Your Landscapes

NATIONAL PARKS

Landscape architects working for the National Park Service were highlighted in the Ken Burns film, "*The National Parks: America's Best Idea*." Their mission is mostly focused on recreation and providing detailed design solutions that give people aesthetic and functional ways to enjoy and connect with our iconic landscapes.



Yosemite National Park, CA

NATIONAL FORESTS

National Forests are "Lands of Many Uses" and landscape architects balance demands for increased access with conservation. They influence public policy through positive collaborations between communities, public agencies, and non-profit or private organizations.

Deschutes National Forest, OR

STATE AND CITY PARKS

State and city parks preserve scenery and protect open space from development by providing natural areas for wildlife habitat and recreation.

Asilomar State Park, CA

NEIGHBORHOOD PARKS

Neighborhood parks provide residents a place of respite, especially in highly urban areas. An urban oasis like this one provides a naturalistic setting for a community's social and recreational activities.

Paley Park, NYC

What Tools Do Landscape Architects Provide To Communities And Public Land Agencies To Accomplish Their Vision And Goals?

- Design Charrettes
- Community Visioning Processes
- Community Plans
- Open Space Conservation Plans
- Corridor Management Plans
- Scenery Management
- Park and Trail Designs

Join us and use your talents to preserve, protect, restore and enhance our iconic landscapes.

LANDSCAPE ARCHITECTURE
Your Environment. Designed.

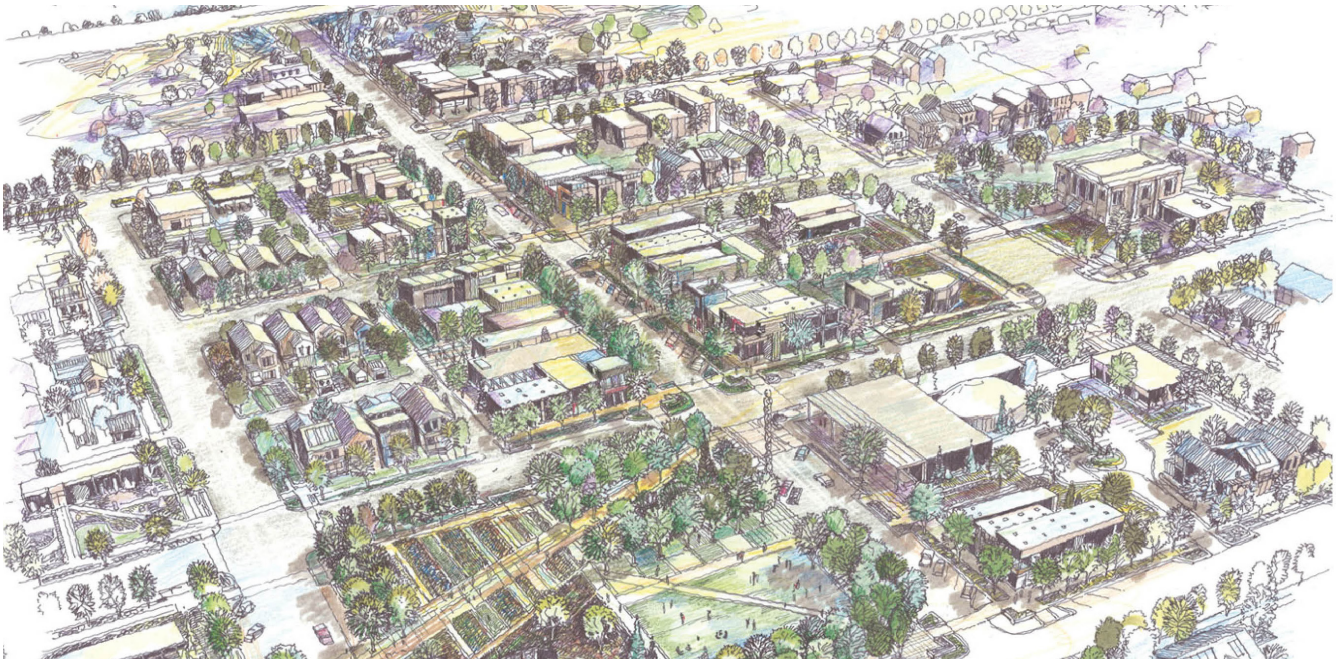
This document was prepared by the Public Practice Advisory Committee of the American Society of Landscape Architects

LANDSCAPE ARCHITECTURE

Designing Spaces That Move You

Most streets were designed to simply move your car from one place to the next. But with a landscape architect, those same streets can take us safely to school, reduce traffic congestion, protect our environment, help local businesses, and even make us healthier.

Can your street do all that?



Everyone knows that walking or riding a bike is a great and easy way to exercise, but many communities lack safe options for getting around without a car. So instead of riding a bike to school or walking to the drug store, we need to drive for even the shortest trips. This adds cars to the road, increasing congestion, traffic accidents, and pollution.

View some examples of what landscape architects can design to create healthy and safe communities »

Learn more at asla.org/design

LANDSCAPE ARCHITECTURE

Designing Spaces That Move You

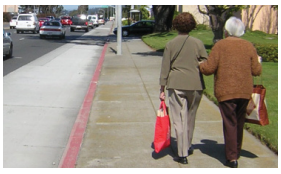
SIDEWALKS

Creating and widening sidewalks allow us to safely walk to school, work, shopping and our favorite restaurants. Not only is walking great exercise, but it takes cars off the road, which reduces traffic and lowers air pollution. In addition, wide sidewalks like this are great for local businesses, attracting more pedestrians to their shops.

ZGF Architects LLP

BIKE LANES

Like sidewalks, bike lanes provide a safe alternative for people to travel without using a car. This proposal also includes more trees, which shade pedestrians and bicyclists, calm traffic, and help clean the air.



Nevue Ngan Associates

TRAFFIC ISLANDS

In residential areas or places with lots of pedestrians, it's important to calm traffic so that the road is safe for both cars and people on foot. Traffic islands like in this landscape architecture proposal help slow traffic down, dramatically reducing accidents. In addition, connecting people to public transit like this light rail also reduces traffic congestion.

The Planning Partnership Limited

CURB EXTENSIONS

Curb extensions can also serve as an excellent design technique to calm traffic in select areas. These extensions in Portland, Oregon calm traffic, provide a visual amenity, and also help reduce water runoff.

Kevin Robert Photography

PERMEABLE PAVING

Streets also create problems with excess water runoff. With no place to go, the water fills up the sewer systems, which are expensive to maintain. The water can also pollute our waterways and even increase the risk of flooding. Landscape architects create permeable paving like this in Chicago, allowing the rain water to flow naturally into the ground instead of the overburdened sewer system.

City of Chicago and Hitchcock Design Group

These are just a few of the ways landscape architects can make a safe, healthy, and more sustainable community.

LANDSCAPE ARCHITECTURE

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Learn more at asla.org/design

LANDSCAPE ARCHITECTURE
A STEM PROFESSION

Living Breakwaters, Staten Island, NY. SCAPE Landscape Architecture

Landscape architecture is inherently a Science, Technology, Engineering, and Mathematics (STEM) discipline. Landscape architects, as stewards of the natural and built environment, routinely apply STEM in the planning and design of sites where millions of people live, work, and play.

A STEM Education

Landscape architects are licensed in all 50 states and the District of Columbia. Ensuring public health, safety, and welfare in the practice of landscape architecture starts with a rigorous STEM higher education, and culminates in a nationally administered four-part examination.

Landscape architecture students are educated, trained, and tested on site design, environmental sciences, grading and drainage, stormwater management, roadway alignment design, vehicular and pedestrian circulation, manipulation of contours and spot elevations, and other technical and scientific areas.

The Landscape Architect Registration Examination (LARE) tests a practitioner's knowledge, skills, and abilities that directly relate to protecting public health, safety, and welfare. A candidate for licensure must pass each section to qualify to become licensed.

Section 1: Project and Construction Management

Section 2: Inventory and Analysis

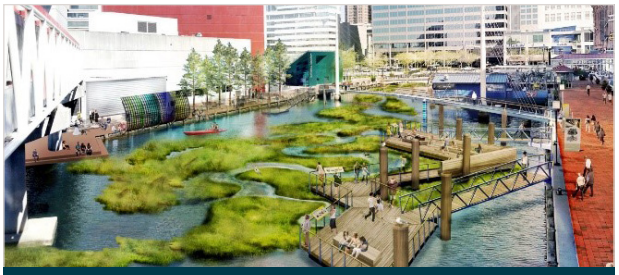
Section 3: Design

Section 4: Grading, Drainage, and Construction Documentation

A STEM Designation

Several state and federal entities, such as the Bureau of Labor Statistics (BLS) and Office of Management and Budget, recognize landscape architecture as a STEM profession. According to BLS, the need for planning new and existing sites for economic and environmental purposes is expected to grow, and therefore, the demand for landscape architecture services will grow.

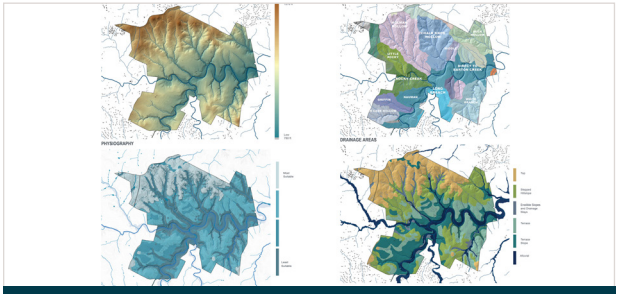
At this time, the Department of Homeland Security (DHS) does not recognize landscape architecture on their STEM Designated Degree Program List. DHS STEM designation would help the country to meet this growing demand by providing greater opportunity for universities to recruit from a global pool of qualified applicants.



2018 Research Honor Award. Urban Aquatic Health: Integrating New Technologies and Resiliency into Floating Wetlands. Ayers Saint Gross.
(Image credit: Ayers Saint Gross)

Science

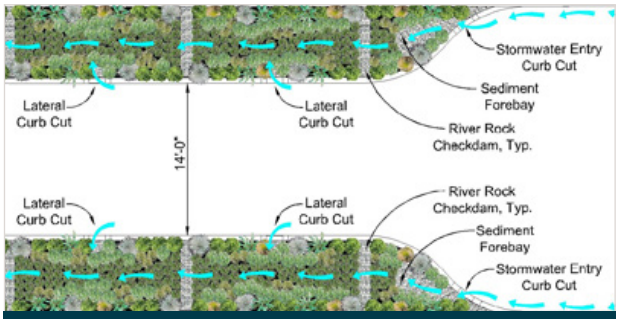
Landscape architects study the natural world daily through environmental sciences, ecology, soil science, biology, physics, horticulture, and others. Plans call for the transformation of Baltimore's Inner Harbor by adding floating wetlands. This is achieved by using scientific knowledge and research, which will improve the harbor's water quality, biodiversity, and resiliency.



2018 Analysis and Planning Honor Award. From Pixels to Stewardship: Advancing Conservation Through Digital Innovation. Andropogon Associates, Ltd.
(Image credit: Andropogon Associates, Ltd.)

Technology

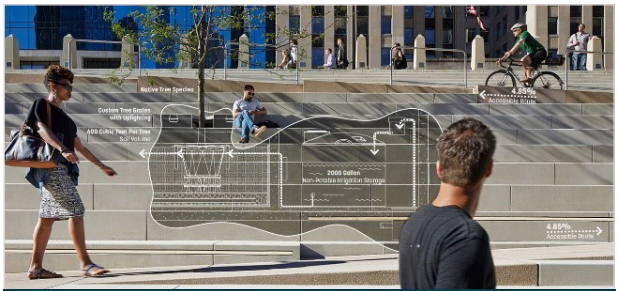
Landscape architects must be adept in the use of computer applications and other cutting-edge technologies such as mapping, GIS, LiDAR, digital drawing, drones, and simulation tools. State-of-the-art digital tools were used to design a master plan for the Shield Ranch's 6,800 acres, including LiDAR data hydrogeological modeling, LiDAR data viewshed and soundscape modeling, client-engaged GIS, and eco-hydrogeological planning frameworks.



2007 General Design Honor Award. NE Siskiyou Green Street. Kevin Robert Perry, ASLA.
(Image credit: Kevin Robert Perry, ASLA)

Engineering

Landscape architects create solutions, using physical science principles, for many outdoor problems, including the manipulation of landforms through grading, drainage-system design, stormwater management, erosion control, and retaining walls. Landscape architects used their education and training to create a nature-based stormwater management system on NE Siskiyou Green Street using bioretention gardens, curb extensions, and curb cuts.



2018 General Design Honor Award. Chicago Riverwalk | State Street to Franklin Street. Sasaki and Ross Barney Architects.
(Image credit: ©Kate Joyce; overlay Courtesy of Sasaki)

Mathematics

Landscape architects study algebra, trigonometry, geometry, and calculus to be used in structural, earthwork, stormwater, electrical, energy, and hydraulic computations. For example, mathematics was used to calculate the design solutions related to stormwater management, irrigation storage, and soil volumes for the flood resilient Chicago Riverwalk project.

Appendix B

Virginia Tech and University of Virginia Degree Requirements for First Professional Degrees in Landscape Architecture

Catalog Search

Entire Catalog

Search Catalog

Whole Word/Phrase

Advanced Search

- CATALOG HOME
- UNIVERSITY OF VIRGINIA
- BOARD OF VISITORS AND UNIVERSITY ADMINISTRATION
- ACADEMIC CALENDAR
- UNIVERSITY REGULATIONS
- DINING, HOUSING, AND TUITION & FEES
- FINANCIAL AID
- PROGRAMS AND DEGREES OFFERED
- COURSE NUMBERING INFORMATION

- GRADUATE SCHOOL OF ARTS & SCIENCES
- SCHOOL OF ARCHITECTURE
- DARDEN GRADUATE SCHOOL OF BUSINESS ADMINISTRATION
- MCINTIRE SCHOOL OF COMMERCE
- CURRY SCHOOL OF EDUCATION AND HUMAN DEVELOPMENT
- SCHOOL OF ENGINEERING AND APPLIED SCIENCE

Master of Landscape Architecture

Return to: Graduate School of Architecture: Departments/Programs

Mission

The field of Landscape Architecture is rapidly evolving to address and redress contemporary environmental and societal issues. The next generation of practitioners, scholars, and educators are facing important problems and challenges. Landscape Architecture at UVA strives to educate and inspire the next generation of landscape architecture leaders. As a department, we develop innovative ideas, critical perspectives, synthetic frameworks, and new techniques to address landscape problems through design across a broad range of contexts and scales, from the garden to the region. In this design approach, we emphasize issues of ecology, social and environmental health, technology, and cultural expression. Drawing on the skills, expertise, and varied perspectives of internationally recognized academics and practitioners– the Landscape Architecture Faculty– we promote a broad perspective on socio-ecological contexts, innovation and tradition, inter-species articulation, cultural and artistic expression, ecological health, and the challenges of living in a rapidly changing environment.

–We construe the design of the environment as a **critical expression of what it means to be human in our time**. In the 21st century, it is necessary to re-define the role of humanity as a co-creator of the environment, collaborating with other and diverse communities, considering multiple species, and curating novel landscape relationships.

–We explore landscape's role in enriching our world by

emphasizing deep linkages between sites and systems, form and process, practices, and values. Through teaching, research, and practice our department positions landscape-making as a primary means to build a more common ground.

–We are committed to preparing our graduates to be **critical thinkers who will lead the next generation of design leaders in practice and academia**. Methodologically, students are challenged to imagine new landscape systems through rigorous research, design speculation, and the deployment of nascent technologies while remaining grounded in the discipline's professional practices and methods of material construction.

–We challenge students to envision landscapes that simultaneously contribute **to public life and embody an ethic towards the bio-physical world.** Our design studios confront the most pressing environmental and social issues of our day – social justice for marginalized communities, renewal strategies for shrinking post-industrial cities, and urban adaptation to global climate change.

From the time students enter their studies, they are encouraged to shape their own individual educational trajectories by integrating their design or non-design undergraduate backgrounds, intellectual interests, and skills into their studies in landscape architecture. We aim to cultivate the passions and individual insights of students while preparing them with the conceptual and technical tools to work across disciplinary boundaries, with human and non-human communities, to help make a more inclusive and resilient world.

Admission

Our students come from a wide variety of academic backgrounds, both with and without prior studies in landscape architecture. Applicants are required to submit an application that includes a series of essays and a digital portfolio of their creative work. The work in the portfolio can range widely from personal design explorations to professional work to creative work produced in art or design classes. Prior to enrollment, students are encouraged to become familiar with the discipline through work experience along with reading and/or coursework in the history of landscape architecture, representation, and ecology. For more information, go to UVa School of Architecture Office of Admissions.

Curriculum

Our curriculum is a structured series of semesters that build incrementally from a core base of knowledge and skills laid out in the first year. While the first year is fully prescribed in its course requirements, later semesters leave elective options that allow students to pursue their own individual interests that can lead to a final independent design research studio or thesis.

DESIGN STUDIOS The core of each semester is the design studio (6 credit hours), where students are introduced to fundamental design methodologies and are asked to pursue and develop their own research. The studio sequence exposes students to the range of scales and topical issues in landscape architecture. In emphasizing the ability to read and interpret a site within its context and shape its future based on those findings, the initial studios are based locally and emphasize on-site experience and documentation of place. Studios in the second and third years offer students opportunities to participate in interdisciplinary studios in cities and locations around the country and abroad. These advanced studios are research-based, which encourages students to investigate the broader issues beyond a specific design problem and arrive at innovative and bold proposals.

In the final semester of all four-degree programs, students have the option to take the research studios where they develop an individual line of inquiry or elect to undertake an independent research ‘Thesis’ studio. Both a design research methods class, as well as a design research seminar, must be taken in advance in order to develop a theoretical basis for independent research.

Supporting the design studios, we have developed three tracks of curricula in related technical and theoretical content:

ECO-TECH Our Eco-Tech or “ecology and technology” sequence integrates the content of plants, landform, water systems, bio-engineering, and regenerative technologies, all focused on innovation through living systems.

DESIGN Computation The Design Computation track presents a broad range of design tools from hand drawing and modeling to digital drawing, simulation, and fabrication.

HISTORY AND Theory Finally, the History and Theories sequence establishes the conceptual underpinnings of ancient to contemporary precedents, challenging students to put their work into an evolving body of critical thinking and knowledge. These three tracks in the curriculum are integrated with projects carried out in studios.

Our curriculum also offers a series of LAR Advanced courses from which students choose to allow for further concentration in one of the three tracks. Finally, students have a range of open electives that can be taken in the department, school-wide, and across the university to explore special topics in landscape architecture and issues in the related disciplines.

Courses taken previously at other institutions are normally not accepted as substitutions for required courses in any of the degree programs. Under exceptional circumstances, a petition along with supporting materials (i.e. syllabus and work samples) may be submitted to receive an exemption from taking a required course. Candidates are required to fulfill the total degree credit requirement regardless of course exemptions granted. Petitions are to be submitted to the department chair or graduate program director for consideration and final decision.

Accreditation

The Master in Landscape Architecture (M.L.A.) program is accredited by the National Landscape Architecture Accreditation Board. The program received its last six-year term of accreditation in the Fall of 2018. The March 2018 visit of the LAAB Accrediting Team resulted in zero recommendations affecting our accreditation. Our next reaccreditation is scheduled for spring 2023.

Master of Landscape Architecture Curricula

There are four paths to earn a Master of Landscape Architecture at UVa. Our Path 3.0 program is for students coming from non-design undergraduate degrees and can be completed in six semesters plus a prerequisite introductory summer session. There are also shorter intensive paths of study for students with degree backgrounds in landscape architecture, and architecture. Please refer to our four curricular paths below:

MLA Path 3.0 program is designed for a student who holds a non-design undergraduate degree and whose educational background is not in landscape architecture or a student without a pre-professional undergraduate landscape architecture degree.

The Master of Landscape Architecture Path 3.0 program allows students with undergraduate accredited degrees in any non-

design field to obtain a professional degree in landscape architecture. The curriculum follows a prescribed core of foundational courses carried out in three years and begins with our introductory Summer Design Institute (SDI). Each of the six semesters is devised around a design studio with supporting history, theory, design computation, and ecology/technology courses. Students also are able to select from an array of open electives from within the Department of Landscape Architecture and the Architecture School, and from departments across the university. The self-tailored choice of electives encourages students to explore the discipline's allied fields, and/or develop an area of expertise, such as design theory, historic preservation, or socio-ecological urbanism. Students are encouraged to undertake self-directed research in the form of independent studies or an independent design research studio, both with Landscape Architecture faculty as advisors.

MLA Path 2.5 program is for students with pre-professional undergraduate landscape architecture degrees, such as a Bachelor of Science in Landscape Architecture or Environmental Design. It is also designed for students holding degrees in landscape architecture from programs outside the U.S. that are not professionally-accredited in the United States.

The MLA Path 2.5 program is a five-semester program for those with a design background in a program that has not been U.S. accredited. Path 2.5 Applicants must have completed at least six design studios with a minimum 5-credit hour for each, or equivalent. A minimum of three studios must be in landscape architecture with the remaining studios in architecture or urban design. In addition, potential candidates must have completed a minimum of two landscape architecture history or theory courses.

As with the Path 3.0 Curriculum, each semester is devised around a design studio with supporting history, theory, design computation, and ecology/technology courses. As a way to ground Path 2.5 students in our program's pedagogy and methods, these students pursue the same studio and course track as entering Path 3.0 students in their first year. The last three semesters include electives that allow for students to pursue specialization and individual interests through an array of courses that are offered in the Department of Landscape Architecture, and from within the A-School and across the university.

International Path 2.5 students must enroll in the introductory SDI/ Summer Design Institute in advance of their required five semesters as a way to acclimate to graduate studies and immerse themselves in the culture of the school and university. Path 2.5 students must matriculate in the fall semester (i.e. cannot begin studies in the spring semester).

Non-native English speaking students are highly encouraged to take the 'English for Academic Purposes' (EAP) course in the summer prior to beginning graduate courses in the fall semester. All international students are required to take English language skills tests upon entering the university. Based on their scores, some will be required to take English communications courses offered during the school year through UVA's Center for American English Language and Culture (CAELC) based on the results of required language testing for all incoming international students. For more information, see https://caelc.virginia.edu/.

MLA Path 2.0 Advanced Program is designed for students with a Bachelor of Landscape Architecture degree.

The Master of Landscape Architecture Path 2.0 Advanced program allows students with a landscape architecture undergraduate degree **from a U.S. accredited program** to earn an MLA degree in landscape architecture in four semesters. Path 2.0 Advanced applicants must have completed the equivalent of eight studios with a minimum of five credits each, A minimum of six studios must be in the discipline of landscape architecture, and the remaining in architecture or urban design. In addition, potential candidates must have completed a minimum of two landscape architecture history or theory courses.

With a substantial amount of previous course credits fulfilled in landscape architectural history and technologies, Path 2.0 Advanced students have the opportunity to create a more-open self-devised program of studios and electives which gives them the opportunity to pursue their individual interests and specialization in the field. Because of their advanced education background in the discipline, students in the Path 2.0 Advanced curriculum are highly encouraged to pursue advanced independent design research in close consultation with a faculty advisor and mentor.

MLA Path 2.0 Program is for students holding a U.S.-accredited Bachelor of Science in Architecture degree.

The MLA Path 2.0 program is an intensive two-year/four-

semester immersion in the core theory and practical knowledge of the landscape architecture profession for students with architecture undergraduate degree backgrounds. Each semester focuses around a design studio with a full complement of supporting landscape history, theory, computation, and ecology/technology courses. Because of the compressed period of studies, the curriculum allows for only a limited number of electives that can be taken within the department or school.

MLA Path 3.0 Curriculum

This program is designed for students who hold a non-design undergraduate degree and whose educational background is not in landscape architecture and for students without a pre-professional undergraduate landscape architecture degree.

The curriculum follows a prescribed core of foundational courses carried out in three years and begins with our introductory Summer Design Institute (SDI). Each of the six semesters is devised around a design studio with supporting history, theory, visualization, and ecology/technology (eco-tech) courses. Students also are able to select from an array of open electives from within the Department of Landscape Architecture and the Architecture School, and from departments across the university. The self-tailored choice of electives encourages students to explore the discipline's allied fields, and/or develop an area of expertise, such as design theory, historic preservation, or socio-ecological urbanism. Students are encouraged to undertake a self-directed research in the form of independent studies or an independent design research studio, both with Landscape Architecture faculty as advisors.

Path 3.0 students must satisfy a total of six electives. Of these, 4 electives must be a mix of LAR Advanced electives and LAR department electives. Remaining elective credits may be taken at the graduate level within any department in the University of Virginia. Up to one elective may be an independent study advised by a faculty member of the LAR program. All incoming international students, whose first language is not English, are required to take the English Language Proficiency Exam administered by the UVA Center for American English Language and Culture (CAELC) unless they have been exempted from the TOEFL or IELTS. Based on the CAELC

assessment of the test results, students who demonstrate a need for additional instruction in English communications are required to take courses specified by CAELC during their first school year. A grade of “S” (Satisfactory) is required to pass the course(s).

Summer Design Institute/SDI Session - Credits 3

The Summer Design Institute prepares graduate students admitted to the Master of Architecture and Master of Landscape Architecture Programs for rigorous professional study in these design disciplines. Three courses comprise the full-time course of study over a four week period during the University of Virginia’s Summer Session.

- ALAR 5010 - Introduction to Design Credits: 1
- ALAR 5020 - Introduction to Design Visualization Credits: 1
- ALAR 5030 - Introduction to Design Theory and Analysis Credits: 1

First Year

Fall Semester - Credits: 16

- LAR 6010 - Foundation Studio I, Credits: 6
- LAR 6210 - EcoTech I, Credits 4
- LAR 6110 - Landscape History I, Credits: 3
- LAR 6710 - Design Computation I, Credits: 3

Spring Semester - Credits: 16

- LAR 6020 - Foundation Studio II, Credits: 6
- LAR 6120 - Landscape History II, Credits: 3
- LAR 6220 - EcoTech II, Credits: 4
- SARC 6720 - Design Computation II, Credits: 3

Second Year

Fall Semester - Credits: 16

- LAR 7010 - Foundation Studio III, Credits: 6
- LAR 7110 - Theories of

Spring Semester- Credits: 16

- LAR 7020 - Foundation Studio IV, Credits: 6
- LAR 7220 - EcoTech IV,

Contemporary Landscape Architecture. Credits: 3
- LAR 7210 - EcoTech III, Credits: 4
- LAR Advanced Course or LAR Department Elective or Open Elective, Credits: 3

Credits: 4
- LAR 7120 - Design Research Seminar, Credits: 3
- LAR Advanced Course or LAR Department Elective or Open Elective, Credits: 3

Third Year

Fall Semester - Credits: 15

- ALAR 8010 - Research Studio I, Credits: 6
- ALAR 8110 - Thesis I*, Credits: 3
  or Open Elective, Credits: 3
- LAR Advanced Course or LAR Department Elective or Open Elective, Credits: 3
- LAR Advanced Course or LAR Department Elective or Open Elective, Credits: 3

Spring Semester - Credits: 15

- ALAR 8020 - Research Studio II, Credits: 6
  or
- ALAR 8040 - Thesis II, Credits: 6
- LAR 8320 - Professional Practice, Credits: 3
- LAR Advanced Course or LAR Department Elective or Open Elective, Credits: 3
- LAR Advanced Course or LAR Department Elective or Open Elective, Credits: 3

Path 3.0 Degree Total - Credits: 97

Note:

1. * Required only for students who want to pursue ALAR 8040 - Thesis Studio.
2. Curricular Practical Training (CPT) credit received for summer or fall break internships cannot be applied toward overall credits for degree requirements. Course credits are applied to allow the student to participate in an internship/externship per the F-1 eligibility requirements and regulations.

MLA Path 2.5 Curriculum

This program is for students with U.S. pre-professional undergraduate landscape architecture degrees, such as Bachelor of Science in Landscape Architecture or Environmental Design. It is also designed for students holding degrees in landscape architecture from programs outside the U.S. that are not U.S. professionally accredited.

As with the Path 3.0 Curriculum, each semester is devised around a design studio with supporting history, theory, plants, visualization, and ecology/technology (eco-tech) courses. As a way to ground Path 2.5 students in our program's pedagogy and methods, these students pursue the same studio and course track as entering Path 3.0 students in their first year. The last three semesters include more electives and allow for students to pursue specialization and individual interests through an array of courses that are offered in the Department of Landscape Architecture, and from within the A-School and across the university.

Path 2.5 students must satisfy a total of four electives. Of these, three electives must be a mix of LAR Advanced electives and LAR department electives. Remaining elective credits may be taken at the graduate level within any department in the University of Virginia. Up to one elective may be an independent study advised by a faculty member of the LAR program.

NOTE: In advance of the following required five semesters, incoming Path 2.5 international students must enroll in the SDI/ Summer Design Institute which is our introductory program designed to acclimate them to graduate studies and immerse them in the culture of the school and university. Path 2.5 students must matriculate in the fall semester (i.e. cannot begin studies in the spring semester).

Incoming international students, whose first language is not English, are required to take the English Language Proficiency Exam administered by the UVA Center for American English Language and Culture (CAELC) unless they have been exempted from the TOEFL or IELTS. Based on the CAELC assessment of the test results, students who demonstrate a need for additional instruction in English communications are required to take courses specified by CAELC during their first school year. A grade of "S" (Satisfactory) is required to pass the course(s).

Summer Design Institute/SDI Session - Credits 3

The Summer Design Institute prepares graduate students admitted to the Master of Architecture and Master of Landscape Architecture Programs for rigorous professional study in these design disciplines. Three courses comprise the full-time course of study over a four week period during the University of Virginia's Summer Session.

- ALAR 5010 - Introduction to Design Credits: 1
- ALAR 5020 - Introduction to Design Visualization Credits: 1
- ALAR 5030 - Introduction to Design Theory and Analysis Credits: 1

First Year

Fall Semester - Credits: 16

- LAR 6010 - Foundation Studio I, Credits: 6
- LAR 6210 - EcoTech I, Credits: 4
- LAR 6110 – Landscape History I, Credits: 3
- LAR 6710 - Design Computation I, Credits: 3

Spring Semester - Credits: 16

- LAR 6020 - Foundation Studio II, Credits: 6
- LAR 6120 – Landscape History II, Credits: 3
- LAR 6220 - EcoTech II, Credits: 4
- SARC 6720 - Design Computation II, Credits: 3

Second Year

Fall Semester - Credits: 13

- LAR 7010 - Foundation Studio III, Credits: 6
- LAR 7110 - Theories of Contemporary Landscape Architecture, Credits: 3
- LAR 7210 - EcoTech III, Credits: 4

Spring Semester - Credits: 16

- LAR 7020 - Foundation Studio IV, Credits: 6
- LAR 7220 - EcoTech IV, Credits: 4
- LAR 7120 - Design Research Seminar, Credits: 3
- LAR 8320 - Professional Practice, Credits: 3

Third Year

Fall Semester - Credits: 14

- ALAR 8010 - Research Studio I, Credits: 6
- LAR Advanced Course or LAR Department Elective or Open Elective, Credits: 3
- LAR Advanced Course or LAR Department Elective or Open Elective, Credits: 3
- LAR Advanced Course or LAR Department Elective or Open Elective, Credits: 2

Path 2.5 Degree Total - Credits: 78

NOTE:

1. Path 2.5 students are required to take two electives. The two electives must be taken within the Department of Landscape Architecture. Remaining elective credits may be taken at the graduate level within any department at the University of Virginia. Up to one elective may be an independent study advised by a faculty member of the LAR program.
2. All incoming international students, whose first language is not English, are required to take the English Language Proficiency Exam administered by the UVA Center for American English Language and Culture (CAELC) unless they have been exempted from the TOEFL or IELTS. Based on the CAELC assessment of the test results, students who demonstrate a need for additional instruction in English communications are strongly encouraged to take courses specified by CAELC during their first school year. A grade of “S” (Satisfactory) is required to pass the course(s).
3. * Please see your advisor about the LAR Advanced Courses.
4. Curricular Practical Training (CPT) credit received for summer or fall break internships cannot be applied toward overall credits for degree requirements. Course credits are applied to allow the student to participate in

an internship/externship per the F-1 eligibility requirements and regulations.

MLA Path 2.0 Advanced Curriculum

MLA Path 2.0 Advanced Program is designed for students with a U.S accredited Bachelor Landscape Architecture degree. (please note: Students holding a U.S accredited B.S. Landscape Architecture are Path 2.5 eligible.)

With a substantial amount of previous course credits fulfilled in landscape architectural history and technologies, Path 2.0 Advanced students are allowed to create a more-open self-devised program of studios and electives which gives them the opportunity to pursue their individual interests and specialization in the field. Because of their advanced educational background in the discipline, students in the Path 2.0 Advanced curriculum are highly encouraged to pursue advanced independent design research in close consultation with a faculty advisor and mentor.

Path 2.0 Advanced students must satisfy a minimum of nine electives. Four of these electives must be taken within the Department of Landscape Architecture, two of which must be history/theory electives. Up to one elective may be an independent study elective advised by a member of the LAR faculty. The remaining five electives are open and may be taken at the graduate level within any department at the University of Virginia.

Incoming international students, whose first language is not English, are required to take the English Language Proficiency Exam administered by the UVA Center for American English Language and Culture (CAELC) unless they have been exempted from the TOEFL or IELTS. Based on the CAELC assessment of the test results, students who demonstrate a need for additional instruction in English communications are required to take courses specified by CAELC during their first school year. A grade of “S” (Satisfactory) is required to pass the course(s).

First Year

Fall Semester - Credits: 16

- LAR 7010 - Foundation

Spring Semester - Credits: 16

- LAR 7020 - Foundation

Studio III, Credits: 6
- LAR 7110 - Theories of Modern Landscape Architecture, Credits: 3
- LAR 7210 - EcoTech III, Credits: 4
- LAR Advanced Course or LAR Department Elective or Open Elective, Credits: 3

Studio IV, Credits: 6
- LAR 7102 - Design Research Seminar, Credits: 3
- LAR 7220 - EcoTech IV, Credits: 4
- LAR Advanced Course or LAR Department Elective or Open Elective, Credits: 3

Second Year

Fall Semester - Credits: 15

- ALAR 8010 - Research Studio I, Credits: 6
- ALAR 8110 - Thesis I, Credits: 3
- LAR Advanced Course or LAR Department Elective or Open Elective, Credits: 3
- LAR Advanced Course or LAR Department Elective or Open Elective, Credits: 3

Spring Semester - Credits: 15

- ALAR 8020 - Research Studio IV, Credits: 6
  or
  ALAR 8040 - Thesis II, Credits: 6
- LAR Advanced Course or LAR Department Elective or Open Elective, Credits: 3
- LAR Advanced Course or LAR Department Elective or Open Elective, Credits: 3
- LAR Advanced Course or LAR Department Elective or Open Elective, Credits: 3

Path 2.0 Advanced Degree Total - Credits: 62

NOTE:

1. Path 2.0 Advanced students are required to take a minimum of seven electives. Four of these electives

must be taken within the Department of Landscape Architecture. Up to one elective may be an independent study elective advised by a member of the LAR faculty. The remaining three electives are open and may be taken at the graduate level within any department in the University of Virginia.

2. All incoming international students, whose first language is not English, are required to take the English Language Proficiency Exam administered by the UVA Center for American English Language and Culture (CAELC) unless they have been exempted from the TOEFL or IELTS. Based on the CAELC assessment of the test results, students who demonstrate a need for additional instruction in English communications are strongly encouraged to take courses specified by CAELC during their first school year. A grade of "S" (Satisfactory) is required to pass the course(s).
3. Curricular Practical Training (CPT) credit received for summer or fall break internships cannot be applied toward overall credits for degree requirements. Course credits are applied to allow the student to participate in an internship/externship per the F-1 eligibility requirements and regulations.

MLA Path 2.0 Curriculum

MLA Path 2.0 Program is for students holding a U.S.-accredited Bachelor of Science in Architecture degree.

This program is an intensive two-year/four-semester immersion in the core theory and practical knowledge of the landscape architecture profession for students with architecture undergraduate degree backgrounds. Each semester focuses around a design studio with a full complement of supporting landscape history, theory, visualization, and ecology/technology courses.

Because of immersion in the discipline of Landscape Architecture, there is only one elective offered to Path 2.0 students. This elective must be taken within the department and could be an independent study advised by a faculty member of the LAR program.

Incoming international students, whose first language is not English, are required to take the English Language Proficiency Exam administered by the UVA Center for American English

Language and Culture (CAELC) unless they have been exempted from the TOEFL or IELTS. Based on the CAELC assessment of the test results, students who demonstrate a need for additional instruction in English communications are required to take courses specified by CAELC during their first school year. A grade of “S” (Satisfactory) is required to pass the course(s).

First Year

Fall Semester - Credits: 16

- LAR 6010 - Foundation Studio I, Credits: 6
- LAR 6210 - EcoTech I, Credits: 4
- LAR 6110 – Landscape History I, Credits: 3
- LAR 6710 - Design Computation I, Credits: 3

Spring Semester - Credits: 16

- LAR 6020 - Foundation Studio II, Credits: 6
- LAR 6120 – Landscape History II, Credits: 3
- LAR 6220 - EcoTech II, Credits: 4
- SARC 6720 - Design Computation II, Credits: 3

Second Year

Fall Semester - Credits: 14

- LAR 7010 - Foundation Studio III, Credits: 6
- LAR 7110 - Theories of Contemporary Landscape Architecture, Credits: 3
- LAR 7210 - EcoTech III, Credits: 4
- LAR Teaching Experience or Independent Study or Open Elective, Credits: 1

Spring Semester - Credits: 15

- LAR 7020 - Foundation Studio IV, Credits: 6
- LAR 7220 - EcoTech IV, Credits: 4
- LAR 7120 - Design Research Methods, Credits: 3
- LAR Advance Course or LAR Department Elective or Open Elective, Credits: 2

Path 2.0 Degree Total - Credits: 61

NOTE:

1. Because of immersion in the discipline of Landscape Architecture, there is one 3 credit elective offered to Path 2.0 students. This elective must be taken within the department. Another 1 credit elective is offered and could be an independent study advised by a faculty member of the LAR program.
2. All incoming international students, whose first language is not English, are required to take the English Language Proficiency Exam administered by the UVA Center for American English Language and Culture (CAELC) unless they have been exempted from the TOEFL or IELTS. Based on the CAELC assessment of the test results, students who demonstrate a need for additional instruction in English communications are strongly encouraged to take courses specified by CAELC during their first school year. A grade of "S" (Satisfactory) is required to pass the course(s).
3. *Required only for students who want to pursue ALAR 8995 Independent Design Research Studio.
4. Curricular Practical Training (CPT) credit received for summer or fall break internships cannot be applied toward overall credits for degree requirements. Course credits are applied to allow the student to participate in an internship/externship per the F-1 eligibility requirements and regulations.

STEM DESIGNATION FOR MLA PROGRAM

We are pleased to announce that as of Spring 2019, UVA School of Architecture's Master of Landscape Architecture Program is STEM-designated.

The Master of Landscape Architecture program at UVA, consistent with other schools and programs of Landscape Architecture nation-wide, includes curricular content that is essential to the comprehensive design and construction of landscapes. It teaches students to use scientific, social scientific and/or humanistic approaches on environment-related issues, including instruction in the principles of ecology and environmental science and related subjects such as policy, economics, social aspects, planning, design, natural resources and the interactions of human beings and nature. The program's STEM-designation (and associated new CIP code: 03.0103) allows our international MLA graduates to apply for the Department of Homeland Security's optional practical training (OPT) extension program for F-1 students with STEM degrees.

STEM OPT EXTENSION

The STEM OPT Extension program affords eligible international students holding F-1 visas, upon completion of a STEM-designated degree, the opportunity to extend their stay in the United States by 24 months (allowing for a maximum of 36 months total) to obtain advanced training in their field – enhancing our students' overall educational experience and helping to bridge their experience between academia and practice.

LANDSCAPE ARCHITECTURE AS A GLOBAL PRACTICE

As Schools of Architecture have continued to evolve their curriculum, looking to the future of the profession, the recognition of architecture and landscape architecture as a global and networked practice has become even more paramount. UVA School of Architecture is strongly committed to providing an expansive, diverse, and global experience for all of its students – through its international research projects, studios, and programs and its international community of faculty, students, and alumni. Our recent STEM-designation also supports our students in opening up critical opportunities for practical and professional experiences. We believe these opportunities will not only positively impact our own students, but also the field of landscape architecture more holistically through the direct promotion of cultural diversity and appreciation.

International students are an essential cohort to the vitality of our landscape architecture program and our community more broadly. The majority of other peer programs are also STEM-designated, in recognition of the value this designation affords to its student body.

OPT + STEM OPT EXTENSION DETAILS

The OPT + STEM OPT Extension application process for students and employers is facilitated through UVA's **International Studies Office**.

ISO's F-1 Optional Practical Training (OPT) Overview + Details

ISO's F-1 24-Month Stem OPT Extension Overview + Details

Landscape Architecture (BLA) Roadmap

with Pathways to General Education

FIRST YEAR

Fall		Spring	
ARCH 1015: Foundation Design Laboratory	6	ARCH 1016: Foundation Design Laboratory	6
LAR 1264: Seeing, Understanding, Repr Landscape (P6a or 6d)	3	LAR 1254: Environment & Natural Systems	3
ENGL 1105: First-Year Writing (P1f)	3	ENGL 1106: First-Year Writing (P1f)	3
MATH 1535: Geometry & Mathematics of Design (P5f)	3	MATH 1536: Geometry & Mathematics of Design (P5f)	3
	15		15

SECOND YEAR

Fall		Spring	
LAR 2015: LAR Design Studio - Place & Process I	6	LAR 2016: LAR Design Studio - Place & Process II	6
LAR 2254: Social & Cultural Landscapes	3	LAR 2164: Landform Function & Aesthetics	4
GEOS 1004: Intro to Earth Science (P4)	3	LAR 3044: Land Analysis & Site Planning (P5a)	3
Pathway 3: _____	3	*Pathway 2:* _____	3
	15		16

THIRD YEAR

Fall		Spring	
LAR 3015: Site, Program & Community I	6	LAR 3016: Site, Program & Community II	6
LAR 3154: Watershed Sensitive Design	4	LAR 3164: Materials, Structures, Details	4
Plant Science Restricted Elective: _____	3	LAR 3264: People, Community, Place	3
Pathway 4: _____	3	*Plant Science Restricted Elective:* _____	3
	16		16

Summer Session I

LAR 3954: Study Abroad (4th Year Studio Option)

FOURTH YEAR

Fall		Spring	
Elective Studio	6	LAR 4014: Design & Construction Documentation	6
Pathway 1a or 2: _____	3	LAR 4034: Evolution of the Am. Landscape (P1a or 2)	3
Pathway 3 or 7: _____	3	LAR 4254: Theories of Landscape Architecture	3
Elective: _____	3	*Earth Science Restricted Elective:* _____	3
	15		15

FIFTH YEAR

Fall		Spring	
LAR 4084: Landscape Design and Planning Studio	6	LAR 4094: Senior Project	6
LAR 4094: Senior Project	3	*Pathway 6a or 6d:* _____	3
LAR 4124: Professional Practice	3	*Elective:* _____	3
Elective: _____	3	*Elective:* _____	3
	15		15

Total Credits 153

Pathways

1 - Discourse (9 credits: 6 foundational + 3 advanced/applied)
2 - Critical Thinking in the Humanities (6 credits)
3 - Reasoning in the Social Sciences (6 credits)
4 - Reasoning in the Natural Sciences (6 credits)
5 - Quantitative and Computational Thinking (9 credits: 6 foundational + 3 advanced/applied)
6 - Critique and Practice in Design and the Arts (6 credits: 3 design + 3 arts, or 6 integrated design and arts)
7 - Critical Analysis of Identify and Equity in the United States (3 credits)

See https://www.pathways.prov.vt.edu/ for list of approved courses.

As of 7/15/2019

LAR Restricted Electives

Earth Science Electives (minimum 3 credits)	Cr.	Pre- or Co-requisites	General Education	Term(s) Offered*
CSES 3134 (ENSC 3134): SOILS IN THE LANDSCAPE – *recommended* A study of soils as functional landscape components, emphasizing their physical, chemical, mineralogical, and biological properties in relation to plant growth, nutrient availability, land-use management, and soil and water quality. Primarily for FOR/FIW, LAR, and other plant/earth science related majors. May not be taken by CSES or ENSC majors. Partially duplicates 3114 and 3124.	3	Pre: One year of introductory CHEM or BIOL or GEOS		Spring
GEOS 3304 (CSES 3304) (GEOG 3304): GEOMORPHOLOGY – *recommended* Examines the variety of landforms that exist at the earth's surface. Detailed investigation of major processes operating at the earth's surface including: tectonic, weathering, fluvial, coastal, eolian, and glacial processes. Field excursion.	3	GEOG 1104 or GEOS 1004 or GEOS 2104		Fall Spring
FREC 4354: FOREST SOIL AND WATERSHED MANAGEMENT Properties and processes of soil and water in forests. Emphasis on management for the delivery of ecosystem goods and services. Includes analysis and interpretation in field and laboratory.	3	CSES 3114 or ENSC 3114 or GEOS 3614 or CSES 3134 or ENSC 3134	CLE Area 5 Pathway 5a	Fall
GEOS 3614 (CSES 3114) (ENSC 3114): SOILS Characterization of soils as a natural resource emphasizing their physical, chemical, mineralogical, and biological properties in relation to nutrient availability, fertilization, plant growth, land-use management, waste application, soil and water quality, and food production. For CSES, ENSC, and related plant- and earth-science majors. Partially duplicates CSES/ENSC 3134.	3	CHEM 1036		Fall
Plant Science Electives (minimum 6 credits)	Cr.	Pre- or Co-requisites	General Education	Term(s) Offered*
HORT 3325: WOODY LANDSCAPE PLANTS – *HORT 3325 or 3326 is required* Functions, growing requirements, hardiness, problems, and methods of identification of landscape plant materials. 3325: Commonly available woody landscape plants.	3			Fall
HORT 3326: WOODY LANDSCAPE PLANTS – *HORT 3325 or 3326 is required* Functions, growing requirements, hardiness, problems, and methods of identification of landscape plant materials. 3326: Native and rare woody landscape plants.	3			Spring
CSES 3644 (ENSC 3644): PLANT MATERIALS FOR ENVIRONMENTAL RESTORATION – *recommended* Overview of ecological principles related to revegetation and restoration of disturbed sites. Function and species requirements of plants in stabilizing disturbed areas including mines, rights-of-way, constructed wetlands, and for the remediation of contaminated soils.	3	Pre: BIOL 1106 Co: CSES 3114		Spring
HORT 2134 (FREC 2134): PLANTS AND GREENSPACES IN URBAN COMMUNITIES – *recommended* Modern concepts of sustainability changing plant use in urban settings. Fundamentals of urban plant systems in the context of urban ecosystem management. Philosophy and critical analysis of sustainability related to green infrastructure, including urban forests, green roofs, urban soils, urban wildlife, urban agriculture, and innovations merging plant and ecosystem functions with building and site engineering. Multi-disciplinary emphasis at site, regional, and global, scales.	3		CLE Area 3 Pathway 4	Fall
FREC 2314: FOREST BIOLOGY AND DENDROLOGY Introduction to the botany, physiology, genetics and silvics of important forest trees of North America.	2	Pre: BIOL 1006 or BIOL 1106 Co: FREC 2324		Fall
FREC 2324: DENDROLOGY LABORATORY Field identification of trees of North America with particular emphasis on trees native to the Eastern United States.	1			Fall Spring
HORT 2304 (BIOL 2304): PLANT BIOLOGY Introductory botany. Form, growth, function, reproduction, and ecological adaptations of major groups of plants.	3	BIOL 1105 BIOL 1106		Fall Spring

Substitutions that meet the spirit of the Earth Science or Plant Science Electives requirement will be considered upon request.
*Term course is offered is subject to change. Consult the latest timetable. When in doubt, contact the department offering the course.

APPROVED
University Registrar

College of Architecture & Urban Studies, School of Architecture + Design
Bachelor of Landscape Architecture Program Checksheet
Students graduating calendar year 2019

Student name: _____

Course Title		Credits	Grade
CLE Curriculum (30 credits)			
Area 1 - Writing and Discourse (min. 6 credits)			
Engl 1105	Freshman English	3	
Engl 1106	Freshman English	3	
Area 2 - Ideas, Cultural Traditions and Values (min. 6 credits)			
LAR 4034	Evolution of the Amer. Land. (WI) Required Major Course	3	
_____	_____	3	
Area 3 - Society and Human Behavior (min. 6 credits)			
_____	_____	3	
_____	_____	3	
Area 4 - Scientific Reasoning and Discovery (min. 6 credits)			
Geos 1004	Physical Geology	3	
_____	_____	3	
Area 5 - Quantitative and Symbolic Reasoning (min. 6 credits)			
Math 1014	Precalc w/Transcendental	3	
Math 1025	Elementary Calculus	3	
	OR		
Math 1535	Geometry and Mathematics of Design	3	
Math 1536	Geometry and Mathematics of Design	3	
Area 6 - Creativity and Aesthetic Experience (1 to 3 credits)			
ARCH 1015	Foundation Design Lab (Required Major Course)	3	
Area 7 - Critical Issues in a Global Context (min. 3 credits)			
_____	_____	3	
Landscape Architecture Professional Core (108-111 credits)			
Design Studios			
* ARCH 1015	Foundation Design Lab	6	
* ARCH 1016	Foundation Design Lab	6	
* LAR 2015	LAR Design Studio - Place & Process I	6	
* LAR 2016	LAR Design Studio - Place & Process II	6	
* LAR 3015	LAR Design Studio - Site, Program and Community I	6	
* LAR 3016	LAR Design Studio - Site, Program and Community II	6	
* LAR 4014	Design & Construction Documentation	6	
* LAR 4084	Landscape Design and Planning Studio (max 12 credits)	6	
		6	
* LAR 4094	Senior Project (min. 9 - max. 12 credits)	9	

Course Title		Credits	Grade
Landscape Architecture Professional Core (continued)			
Technical Courses			
* LAR 2164	Landform Function & Aesthetics	4	
* LAR 3154	Watershed Sensitive Design	4	
* LAR 3164	Materials, Structures, Details	4	
* LAR 4124	Professional Practice	3	
Theory and Methods Courses			
* LAR 1254	Environment and Natural Systems	3	
* LAR 1264	Seeing Understanding Representing Landscape	3	
* LAR 2254	Social and Cultural Landscapes	3	
* LAR 3044	Land Analysis	3	
* LAR 3264	People, Community, Place	3	
* LAR 4034	Evolution of the American Landscape	3	
* LAR 4254	Theories of Landscape Architecture	3	
Plant Science Restricted Electives (min. 6 credits from approved list, must include at least one plant taxonomy or woody plant identification course)			
_____	_____ (taxonomy/woody plant id course)	3	
_____	_____	3	
Earth Science Elective (min. 3 credits from approved list)			
_____	_____	3	
Free Electives (15 credits)			
_____	_____	___	___
_____	_____	___	___
_____	_____	___	___
_____	_____	___	___
_____	_____	___	___
_____	_____	___	___
_____	_____	___	___
_____	_____	___	___
_____	_____	___	___
_____	_____	___	___
CREDITS REQUIRED FOR GRADUATION		**153 credits**	

APPROVED
University Registrar

Foreign Language Requirement: Students who have not met the university foreign language requirement (see university catalogue statement) must do so as part of their program of study while at Virginia Tech. Credits taken to complete this requirement will not count toward graduation.

Minimum Satisfactory Progress: All students must achieve a minimum 2.0 Q.C.A. by the end of the semester in which the 50th credit hour has been attempted. All students must achieve a C- or higher grade in all required landscape architecture design labs (ARCH 1015-LAR 4094) and technology courses (LAR 2164-3164).

Visual Expression, Written and Spoken Communication: LAR Program requirements are met through completion of LAR courses required for the BLA degree.

Plant Science Restricted Electives: Must include at least one plant taxonomy or woody plant identification course - HORT 3325 (plus lab), HORT 3326 (plus lab), or FREC 2314 **and** FREC 2324 (lab).

Course Prerequisites Required: Please refer to the Undergraduate Course Catalog for specific course prerequisite information.

GPA Requirements: A minimum overall 2.0 GPA is required for graduation. A minimum in-major 2.0 GPA is also required.

* Course included in calculation of Major GPA.

APPROVED
University Registrar

Restricted Electives for Landscape Architecture Students					
Earth Science Electives					
Course #	Course Title		Pre.	Offered	Course Description
GEOS 3304	Geomorphology	Recom.	GEOS 1004(A4)or1014 (A7)	II	Geomorphlogy - Examins the land forms at the earth's surface. Detaileed investigation of major processes operating at the earth's surfaceincluding: tectonics, fluvial, coastal, eolian, and glacial processes. Field excursions Pre: GEOG 1104 or GEOS 1004 or GEOS 2104 (3H,3C)
GEOS 3614	Soils		CHEM 1036	I	Soils - Characterization of soils as a natural resource emphasizing their physical, chemical, mineralogical and biological properties in relation to nutrient availability, fertilization, plant growth, land use management, waste application, soil and water quality,and food production. (CSES, ENSC, and related plant and earth science majors) Partially duplicates CSES/ENSC 3134 Pre. 1036. (3H,3C)
FREC 4354	Forest Soils		FREC 3314	I	Forest Soils - Principles of forest soils and hydrology and applications to forest management. Forest soil development, relationships of soil and hydrologic properties to tree growth, and the management of soil and soil water to enhance fiber production. Pre: 3314. (2H,3L,3C) I.
CSES 3134	Soils in the Landscape	Recom.	CSES 1004	II	SOILS IN THE LANDSCAPE - A study of soils as functional landscape components, emphasizing their physical, chemical, mineralogical, and biological properties in relation to plant growth, nutrient availability, land-use management, and soil and water quality. Primarily for FOR/FIW, LAR, and other plant/earth science related majors. May not be taken by CSES or ENSC majors. Partially duplicates 3114 and 3124. Pre: one year of introductory CHEM or BIOL or GEOS. II. (2H,3L,3C)
Plant Sciences Electives					
Course #	Course Title		Pre.	Offered	Course Description
HORT 3325	Woody Landscape Plants	Req 3325 or 3326	NA	I	Woody Landscape Plants - Functions, growing requirements, hardiness, problems, and methods of identification of landscape plant materials. 3325: Commonly available woody landscape plants. Junior standing required. (2H,3L,3C) 3325: I; 3326: standing required.
HORT 3326	Woody Landscape Plants	Req 3325 or 3326	HORT 3325	II	Woody Landscape Plants - Functions, growing requirements, hardiness, problems, and methods of identification of landscape plant materials. 3326: Native and rare woody landscape plants. Junior standing required. (2H,3L,3C) 3325: I; 3326: standing required.
FREC 2314	Biology and Forest Dendrology		BIOL 1006 (A4)	I	Biology and Forest Dendrology - Introduction to the botany, physiology, genetics and silvics of important forest trees of North America. I. Pre: BIOL 1006 or BIOL 1106. Co: 2324. (2H,2C).
FREC 2324	Biology and Forest Dendrology LAB		Co rec w/2314	I	Dendrology Lab - Field identification of trees of North America with particular emphasis on trees native to the Eastern United States. I (3L,1C)
CSES 3644	Plant Materials for Environmental Restoration	Recom.	BIOL 1106 (A4)	I	Plant Materials for Environmental restoration - Overview of ecological principles related to revegetation and restoration of disturbed sites. Function and species requirements of plants in stabilizing disturbed areas including mines, rights-of-way, constructed wetlands, and for the remediation of contaminated soils. Pre: BIOL 1106. Co: 3114. (3H,3C) I.
HORT 2304	Plant Biology		HORT 1005	I,II	Plant Biology - Introductory botany. Form, growth, function, reproduction, and ecological adaptations of major groups of plants. Pre: BIOL 1105, BIOL 1106. (3H,3C) I,II.
HORT 2134	Plants & Greenspaces Urban Com		NA	II	Modern concepts of sustainability changing plant use in urban settings. Fundamentals of urban horticulture and urban ecosystems. Philosophy of sustainability, urban forestry, urban wildlife, sustainable and community-supported agriculture, and innovations merging plant and ecosystem functions with building and site engineering. Multi-disciplinary emphasis in individual, community, regional, and global scales.

VT MLA Course Descriptions for standing courses

Studios

LAR 4705, 4706: Landscape Design and Planning

Theories, methods, techniques, and tools relating to the planning and design of sites, communities, and regional landscapes.

4705: Emphasis on the development of design ability through the study of: two- and three-dimensional design, principles and elements of spatial composition, and theories and techniques for planning and design of small sites.

4706: Emphasis on the evaluation of land resources and the allocation of land uses within large complex sites and regional landscapes. Theories and techniques of site planning and community design are explored.

LAR 5005, 5006: Graduate Landscape Architecture Design Laboratory

Graduate landscape architecture laboratory addressing complex issues of landscape design and planning. The scope of planning and design includes the relationship of specific sites to their larger urban and/or regional contexts.

LAR 5704: Advanced Landscape Design and Planning Lab

Studio addressing advanced problems in landscape design and planning.

LAR 5754: Thesis Studio

Thesis studio is an alternative to the conventional academic thesis for students pursuing a master's degree in landscape architecture. Thesis studio involves literature review, composition of a position paper grounded in design or planning theory and completion of studio projects(s) that test or demonstrate the theoretical position.

LAR 5724: Applied Studies in Landscape Architecture Research

Scholarship in Landscape Architecture An overview of scholarship in landscape architecture with emphasis on research approaches and methods pertaining to the advancement of knowledge in the profession. Application of ideas through the completion of a preliminary research project. Pre: Familiarity with landscape architecture or a closely allied environmental planning/design discipline.

LAR 5774: Advanced Graduate Design Lab

Advanced graduate landscape architecture studio addressing complex issues of landscape design and planning related to student focused research areas. Literature review grounded in design or planning theory. Completion of studio project(s) that test or demonstrate the design resolution of problems in the student's research area.

Technology Courses

LAR 5164: Tectonics of Landscape Architecture I

Topography and Grading: Introduction to landscape architecture technology, focusing on the fundamentals of cartography, topography, grading and landform manipulation.

LAR 5264: Tectonics of Landscape Architecture II

Site and Process: Links landscape architectural site design with environmental and construction processes. Conceptual site designs are developed through the production of documents for layout and grading of sites, stormwater management, and design and management of vegetative processes. Technical practices are framed within larger discourses of site conceptualization and representation.

LAR 5364: Tectonics of Landscape Architecture III

Material Construction: Links landscape architectural design, engineering, materials, and construction processes. Construction materials and assembly techniques. Preparation of

landscape architectural drawings and specifications. Methods of documentation are also covered, including conventional and digital communication technologies.

LAR 5044: Land Analysis

Introduction to the concepts and methods of ecological resource survey and analysis at regional and site scales. Approaches to environmental problem solving with an emphasis on data collection, evaluation, and synthesis using applicable technologies such as geographic information systems. Interpretation of landscape resource data for the purpose of physical planning and design.

LAR 5034G: Watershed Sensitive Design & Construction

Examines soil and water resource issues related to landscape architectural site planning and design. Key topics include watershed sensitive site design, estimation and management of storm water runoff, rainwater conservation, design of open channel conveyances for site planning applications, and erosion and sedimentation control.

Theory and Methods Courses

LAR 4124 (ARCH 4044): Professional Practice

Introduction to scope and diversity of the building enterprise, addressing private and public macroeconomic, industrial, technical, professional, and regulatory institutions. Analysis of historic evaluation of professional roles and practices; emergence of new modes of practice, including innovative facilities procurement methods.

ARCH 5045: Environmental Design Research

Methods for identifying, evaluating, and enhancing the knowledge base for design decisions at scales ranging from room to region. Course emphasizes analytic and empirical approaches to characterizing attributes of the physical environments and their transformation into design variables. Sources of emerging knowledge and systems for maintaining technical currency are identified.

LAR 5254: Theories of Landscape Architecture

Critical examination of theories relevant to landscape architectural design and the inter-relationship among theory, practice, and research with special emphasis on contemporary theories. Evolution of theory with respect to built works. Overview of concurrent design theories and philosophies in the related arts. Graduate standing or instructor's permission.

LAR 5334: Landscape Architecture History

Historical development of landscape architecture with emphasis on western culture from Ancient Greece through the 20th Century. Emphasis on design theories, relationships between society and nature, conceptions of landscape by different social groups, and relationships between site design and urban design.

PLAN OF STUDY
<Student Name>
<Student ID Number>
Leading to the Degree of Master of Landscape Architecture
First-Professional Degree

Dept./Course No.	Course Title	Semester	Grade	Credits
Research and Thesis				
LAR 5994	Research and Thesis			3
LAR 5994	Research and Thesis			5[1]

5000 and Higher Level Courses[2]
(List all 5000-level courses except Thesis or Thesis Studio in this section)

MLA Core:

LAR 5005	Graduate Design Lab I			5
LAR 5006	Graduate Design Lab II			5
LAR 5704	Advanced Land Design			5
LAR 5724	Scholarship in Landscape Architecture			3
LAR 5334	Landscape Architecture History			
LAR 5304G	Topics in LAR, or another graduate level course offered by the Landscape Architecture Program, or related to landscape architecture			
LAR 5164	Tectonics of LA I: Topography/Grading			3
LAR 5264	Tectonics of LA II: Site/Process			3
LAR 5364	Tectonics of LA III: Material Construction			3
Free Electives:				
XXXX 5???	Graduate Elective			3
XXXX 5???	Graduate Elective			3
XXXX 5???	Graduate Elective			3
		Total MLA Studies		**50 (min)**

[1] Minimum of 8 credits, maximum of 10 credits, normally taken 3 credits in the fall semester and 5 credits in the spring semester.
[2] Minimum 36 credits not including thesis credits.

Qualifying Courses (Required for the First Professional Degree in Landscape Architecture) *

Qualifying Core:

LAR4705	Landscape Design & Planning I	5
LAR4706	Landscape Design & Planning II	5
LAR4124	Professional Practice	3

Qualifying Professional Restricted Electives:

XXXX ????	Materials[3]	3
LAR5304G	Digital Representations of Landscapes	3
XXXX ????	Natural Systems[4]	3
LAR5304G	Topics in LAR: Cultivating Landscapes	3

Total Qualifying Studies[5] **25 credits**

Include a brief paragraph here that states the student's area of focus (mastery) and how the program of study will provide emphasis in that area.

Major Professor[6]

Committee Member

Committee Member

Terry Clements, Program Chair

Student Name

Student Number

[3] Students select from a list of approved NCR offerings in Architecture (e.g., Materials Process Workshop, Design Build, Printmaking, Photography).
[4] Students select from a list of approved NCR offerings in Natural Resources (e.g., Wetland Ecology and Policy; Conservation Ecology; Urban Ecology).
[5] If a qualifying requirement is met some way other than by taking the qualifying course (a course taken elsewhere, professional experience or by examination), please indicate how this was met on the program of study.
[6] Must be a full-time faculty person from the Landscape Architecture Program.

MLA CURRICULUM REQUIREMENTS-
For Graduate Programs of Study
(effective fall 2014 and following)

The 3-year first professional degree program is for students who do not have a previous degree in landscape architecture or a closely related field. The first professional degree program has two components: qualifying studies and graduate studies. The qualifying studies component is typically 25 credits. It is not part of the official graduate plan of study. Qualifying studies are regulated by program policy and are concerned with general student preparedness for graduate studies as well as professional content area necessary for completion of the expectations for an accredited landscape architecture degree program. The graduate studies component, nominally the second and third years, constitutes the official graduate plan of study. The graduate component is regulated by graduate curriculum requirements as follows:

5000 level courses (minimum) (excluding thesis or thesis studio)	36
Thesis or thesis studio (minimum)	8
Thesis or thesis studio (maximum)	10
Independent & Special Study 5974, 5984, 6984 courses (maximum)	6
Total hours required (minimum - including thesis or thesis studio)	50

This template revised into a Word doc 12/19/2019

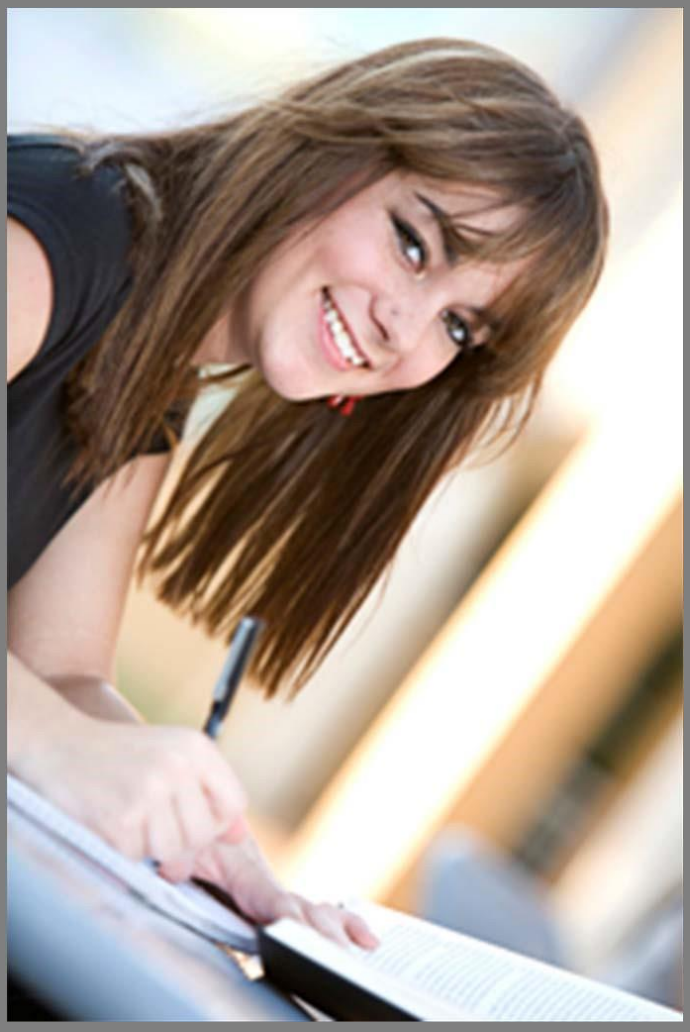
Appendix C

L.A.R.E. Orientation, Understanding the Landscape Architect Registration Examination

2017

L.A.R.E. Orientation

Understanding the Landscape Architect Registration Examination



CLARB

The Council of Landscape Architectural Registration Boards
www.CLARB.org
02/2017

Table of Contents

Preface

This examination information booklet supersedes all information previously distributed concerning the Landscape Architect Registration Examination (L.A.R.E.). The material in this booklet is for use on the Landscape Architect Registration Examination (L.A.R.E.) only.

This booklet may not be brought into the examination.

What is CLARB? Why is CLARB involved with the L.A.R.E.?

CLARB is a non-profit association and its members are the state and provincial registration boards that regulate the profession of landscape architecture.

CLARB's mission is to foster the public health, safety and welfare related to the use and protection of the natural and built environment affected by the practice of landscape architecture. To accomplish this mission, CLARB provides programs and services to its members that ensure consistency in competency of landscape architects and others involved in making decisions affecting the development and conservation of land by:

- Establishing and promoting standards for their professional competency and conduct, and examining and certifying their competency.
- Providing information and resources to those affected by the practice and regulation of landscape architecture thereby assuring that they are well informed, educated and empowered regarding the value and benefits of the licensed practice of landscape architecture.

What is the L.A.R.E.?

The Landscape Architect Registration Examination (L.A.R.E.) is a four-part fully computerized examination designed to determine whether applicants for landscape architectural licensure possess sufficient knowledge, skills and abilities to provide landscape architectural services without endangering the health, safety and welfare of the public. It is prepared and scored by CLARB in accordance with all current standards for fairness and quality of licensure exams.

All sections of the L.A.R.E. are administered by CLARB and all candidates register for the exam on the CLARB website. While the requirements to sit for the exam vary by jurisdiction, the exam, the administration dates and procedures and the passing standards are the same in every jurisdiction.

How is the content of the L.A.R.E. determined?

The content of the L.A.R.E. is based on the results of a scientific “job analysis” survey conducted every five to seven years. The most recent survey was administered in early 2016 in which more than 5548 practicing landscape architects from the United States and Canada participated. The survey results were analyzed by a group of subject matter experts, comprised of licensed landscape architects representing diversity (areas of practice, geographic) of the profession.

Survey respondents were asked to rate all job tasks on three separate scales: how frequently the tasks were performed, how important the tasks were to successful performance of the job, and whether successful performance of each task was required at initial licensure. Overall, the tasks, and subsequent knowledge, that are performed most often are considered the most important and are required at the initial point of licensure and thus form the basis of the L.A.R.E.

When and where is the L.A.R.E. administered?

The L.A.R.E. is administered three times per year over two week windows. CLARB partners with Pearson VUE Test Centers to administer the L.A.R.E. The exam can be taken in any Pearson VUE Test Center that offers the L.A.R.E. regardless of where the candidate wishes to become initially licensed.

Special Accommodations

Registering for the Exam with Special Accommodations

CLARB follows the standards set by the Americans with Disabilities Act (ADA) for accommodations for disabled candidates. Should you require special accommodations for a disability, please contact CLARB as soon as possible to ensure that the testing environment will meet your needs.

Scheduling a Test Appointment with Special Accommodations

Candidates who test with special accommodations cannot schedule a test appointment with Pearson VUE via the internet. Once you have registered for the L.A.R.E., please contact CLARB to obtain information on how to schedule your testing appointment.

The L.A.R.E. Structure

Understanding the Content of the L.A.R.E.

The Landscape Architect Registration Examination (L.A.R.E) tests applicants for the knowledge and skills required to practice those aspects of landscape architecture that impact the health, safety and welfare of the public.

Exam Content

This guide describes the content that will be tested under each section of the examination. Subsection breakdowns indicate a more detailed description of specific subject matter found on the examination as well as the percentage of items that will be included in that subsection topic.

For additional information about the exam including requirements to take the test, the registration process and the scoring process, please visit the "Take the Exam" section of the CLARB website or contact CLARB.

Section 1 - Project and Construction Management

85 scored items & 15 pretest items consisting of multiple-choice and multiple-response questions; 3 hours seat time, 2 ½ hours for exam

Pre-Project Management: 10%	Project Management: 30%	Bidding: 20%	Construction: 30%	Maintenance: 10%
• Select Project Team • Develop Contract • Negotiate Contract • Prepare RFPs or RFQs • Determine Project Scope, Schedule, and Budget	• Manage Project Team • Manage Project Scope, Schedule, and Budget • Determine Common Goals and Objectives • Establish Quality Control Procedures and Conduct Quality Control Review • Facilitate Meetings Coordinate Work of/with Other Disciplines Document Design Decisions and Project Communication • Execute Records Retention Policy • Facilitate Client Review and Coordination • Obtain Permits • Prepare Cost Estimates • Prepare Project Deliverables	• Develop Bidding Criteria • Prepare and Issue Addenda • Facilitate Meetings • Evaluate Bids and Make Recommendations • Identify Delivery Methods • Evaluate Contractor Qualifications • Assist with Construction Contract Execution and Administration	• Respond to RFIs • Coordinate with Contractors • Facilitate Pre-Construction Meeting • Document Pre-Construction Existing Conditions • Review Submittals • Prepare Change Orders • Conduct and Document Construction-related Actions • Prepare Drawing Revisions or Clarification Sketches • Review and Certify Applications for Payment • Attend Substantial Completion (practical completion) Walkthrough and Prepare Punch List (deficiency list) • Attend Final Completion Walkthrough • Prepare As-Built (record) Drawings • Conduct Warranty Review • Conduct Project Close-out • Collect and Analyze Performance Metrics	• Estimate Maintenance and Management Costs • Prepare Maintenance and Operation Manual • Review Maintenance Services • Prepare Management Plan

Section 2 – Inventory and Analysis

70 scored items & 10 pretest items consisting of multiple-choice and multiple-response, 2 ½ hours seat time, 2 hours for the exam

Site Inventory: 35%	Physical Analysis: 40%	Contextual Analysis: 25%
• Determine Applicable Codes, Regulations, and Permitting Requirements • Collect Contextual Data • Gather Stakeholder Input • Identify Policy Objectives • Conduct Project Related Research • Conduct Onsite Investigation and Fieldwork • Document Site Inventory • Determine Performance Metrics	• Determine Appropriate Types of Analyses • Perform Circulation Analysis • Interpret Utility Analysis • Perform Visual Resource Analysis • Perform Micro and Macro Climate Analysis • Perform Hydrological Analysis • Perform Vegetation Analysis • Interpret Ecological Analysis • Perform Topographical Analysis • Interpret Soil and Geotechnical/Geological Analysis • Interpret Environmental Studies	• Analyze Codes, Regulations, and Permitting Requirements for Design Impact • Interpret Cultural, Historical, and Archeological Analysis • Interpret Social Analysis • Interpret Economic Analysis • Analyze Contextual Data • Analyze Stakeholder Feedback

Section 3 – Design

85 scored items & 15 pretest items consisting of advanced item types, multiple-choice and multiple-response questions; 4 hours seat time, 3 ½ hours for the exam

Stakeholder Process: 9%	Master Planning: 45%	Site Design: 46%
• Design and Execute Public Participation Process • Prioritize Stakeholder Goals • Initiate Communication Strategy • Synthesize Stakeholder Feedback • Communicate Concept(s)/Schematic(s)	• Perform Site Analysis and Determine Opportunities and Constraints • Develop Vision or Framework Plan • Develop and Conduct Urban Plan • Develop Land Use Plan • Develop Strategic Implementation Plan • Develop Site Master Plan • Develop Historic/Cultural Restoration and Preservation Plan • Develop Parks, Open Space, and Trails Master Plan • Develop Design Guidelines • Develop a Feasibility Study • Develop View Corridor Plan • Develop Redevelopment Plan • Develop Environmental Resources Plan • Develop Multi-modal Transportation Plan	• Synthesize and Apply the Site Analysis • Develop and Refine the Program • Create the Basis for the Design • Create Conceptual Design Alternatives and Scenarios • Evaluate Design Alternatives • Refine and Synthesize Concept Alternative • Develop Schematic Design • Prepare Preliminary Quantities and Cost Estimate • Prepare Presentation Drawings and Communication Tools • Compile Materials Sample Board • Identify and Develop Performance Metrics

Section 4 – Grading, Drainage and Construction Documentation

105 scored items & 15 pretest items consisting of advanced item types, multiple-choice and multiple-response questions; 4 ½ hours seat time, 4 hours for the exam

Site Preparation Plans: 20%	General Plans and Details: 40%	Specialty Plans: 25%	Specifications: 15%
• Develop Demolition Plan • Develop Existing Conditions Plan • Prepare Soil Boring Location Plan • Develop Stormwater Pollution Prevention Plan • Develop Site Protection Plan • Develop Mitigation Plan	• Develop Layout Plan • Develop General Notes • Develop Grading and Drainage Plan • Develop Planting Practices, Plans, Notes and Schedules • Develop Materials Plan • Develop Details • Prepare Sections, Elevations, and Profiles • Incorporate Code Requirements • Prepare Summary of Quantities • Prepare Site Infrastructure Plan	• Develop Phasing Plan • Develop Irrigation Plan • Prepare Lighting Plan • Develop Site Furnishings Plan • Develop Signage and Wayfinding Plan • Develop Traffic Control Plan • Develop Emergency Access Plan • Prepare Stormwater Management Plan	• Develop Technical Specifications • Prepare Bid Form/Schedule • Develop Project Manual/Front End Specifications

Exam Methodology

The L.A.R.E. consists of four computer-based exam sections. Each section is independent of the others. Sections 1 and 2 consist of multiple-choice and multiple-response questions and Sections 3 and 4 consist of advanced item types ("drag and place" and "hot spot" items), multiple-choice and multiple-response questions. A demonstration video of the four item types can be found in the "Prepare for the Exam" section of the CLARB website.

This guide details the knowledge areas and total number of items for each section. The score for each of the exam sections is determined by the number of questions answered correctly. Items left blank are counted as incorrect. Each item addresses one of the areas of knowledge described in the content of the exam and is worth one point each.

During and immediately following the exam administration we collect candidate feedback on exam questions. We also review the item statistics to ensure the items all performed properly. Both candidate feedback and item statistics are reviewed and any adjustments made to the items such as removing the item from scoring are made prior to the score calculations. The exam data and scoring are then thoroughly run through quality control procedures by psychometric professionals.

Pretest Items

All exams include a limited number of pretest items that will NOT be scored and will NOT have an impact on your results. This is common practice within high-stakes testing and allows CLARB to evaluate the items for potential use in future exams. Pretest items are randomly placed throughout the exam and are not identifiable as pretest items.

Item types

There are four item types that can be presented on the L.A.R.E.:

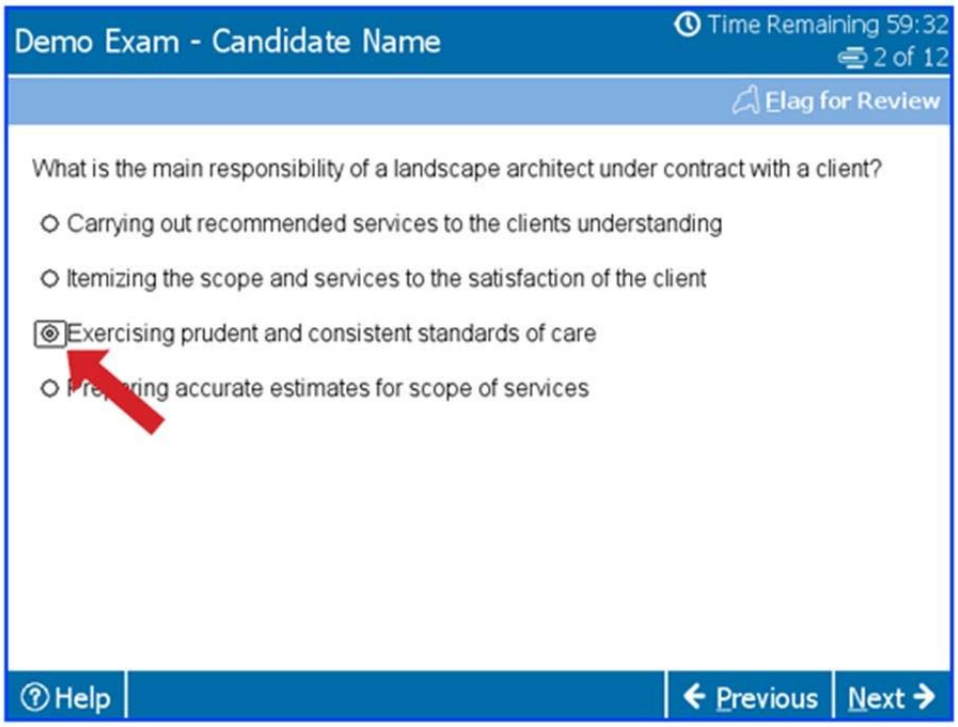
- Multiple Choice - You will select **ONE** answer.
- Multiple Response - You will select **TWO OR MORE** answers.
- Hot Spot - You will be required to ***select*** the most appropriate location by clicking directly on the plan.
- Drag and Place - You will be required to choose the appropriate project element(s) and ***place*** the element on the site.

More information about each item type is presented next and can also be experienced through the video on the "Prepare for the Exam" page of the CLARB website.

Multiple Choice Items

Select an answer by clicking on the circle to the left of the answer.

To change your answer, select another answer.

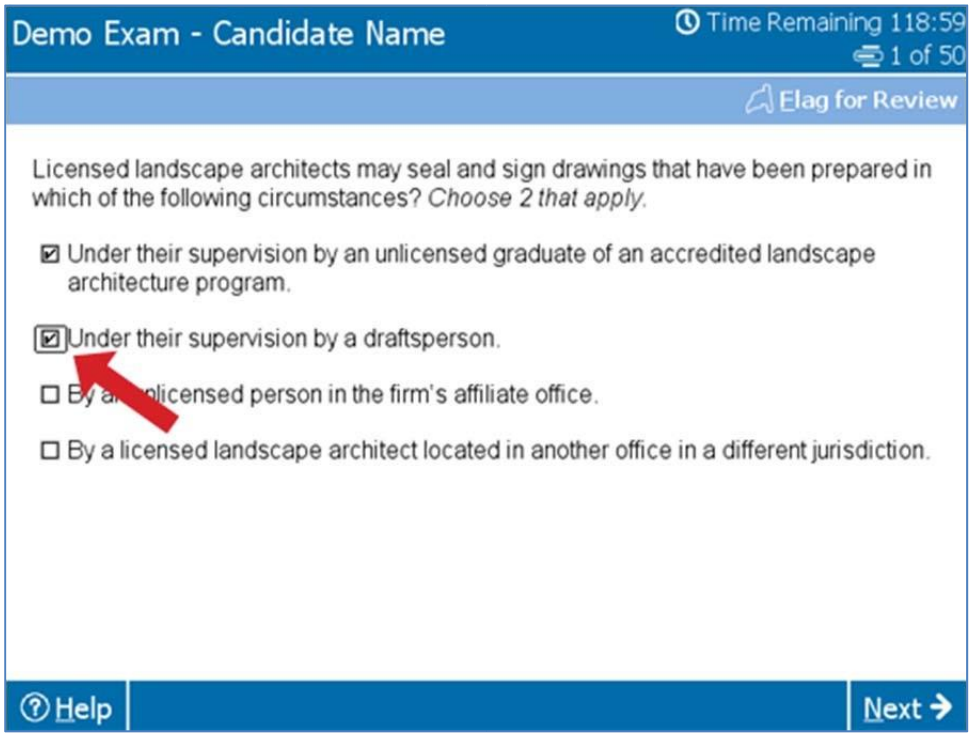


Multiple-response Items

This item type will ask you to ***"choose all that apply"*** or to ***"choose 2"*** or ***"choose 3"*** etc.

Select **two** or more of the answer choices by clicking on the box to the left of the answer or by clicking on the answer itself.

To remove a selection, click on the answer again.



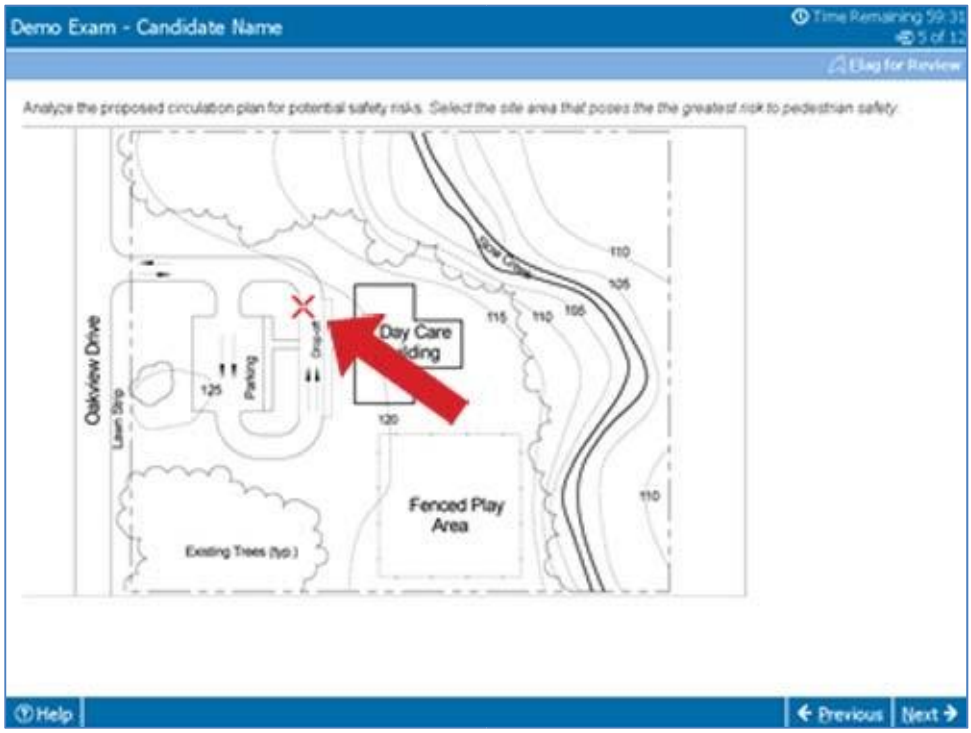
Hot Spot Items

This item type will require you to ***select*** the most appropriate location on a site or proposed plan to satisfy the question requirements.

Select the most appropriate location by moving your mouse cursor to the area of the plan that you would like to choose and then clicking the left mouse button.

A **red "X"** will remain on the plan to indicate your selection.

To change your answer, click on another area of the plan. This will remove your initial selection and indicate a different answer selection.



Drag and Place Items

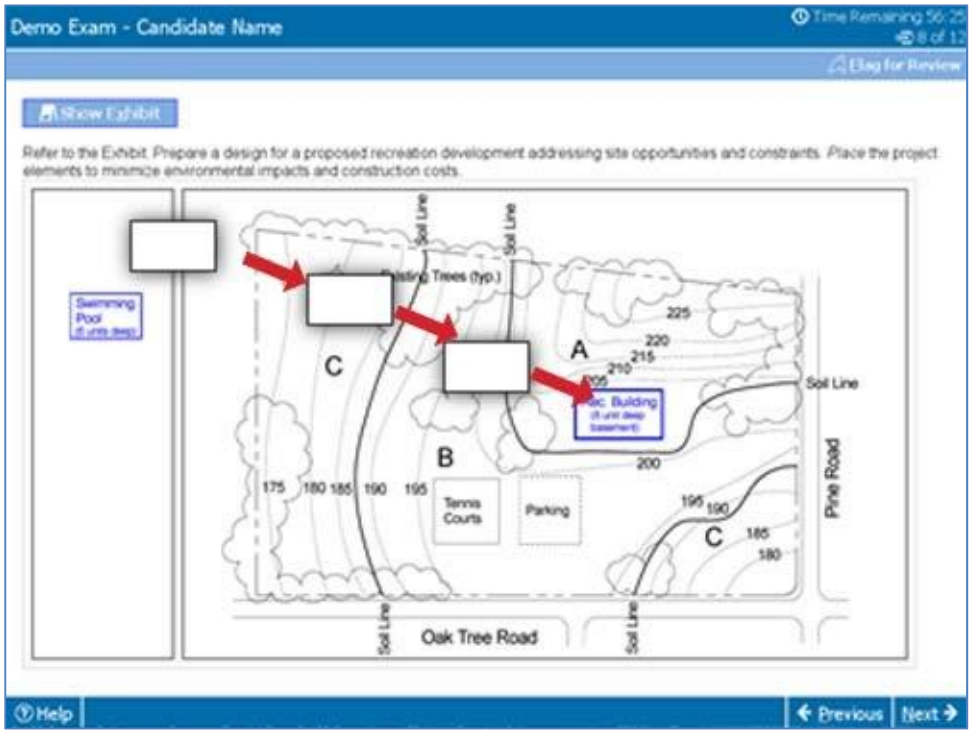
This item type will require you to select the project element(s) and ***place*** the element(s) on a site.

Select the project element(s) from the project element area which is located on the left side of the screen by moving your mouse cursor over the element and by **clicking and holding** the left mouse button.

While holding the left mouse button, you can use the mouse to move the project element to your selected location on the site.

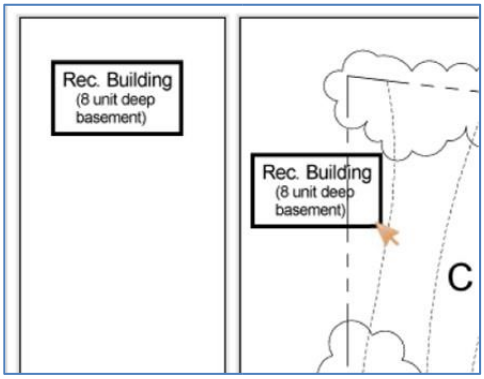
Releasing the left mouse button will "drop" the project element on your selected location.

You may change your selected location by moving the mouse cursor over the project element and following the steps above to move it to a different location.



You may be required to use multiple copies of each project element to answer the item.

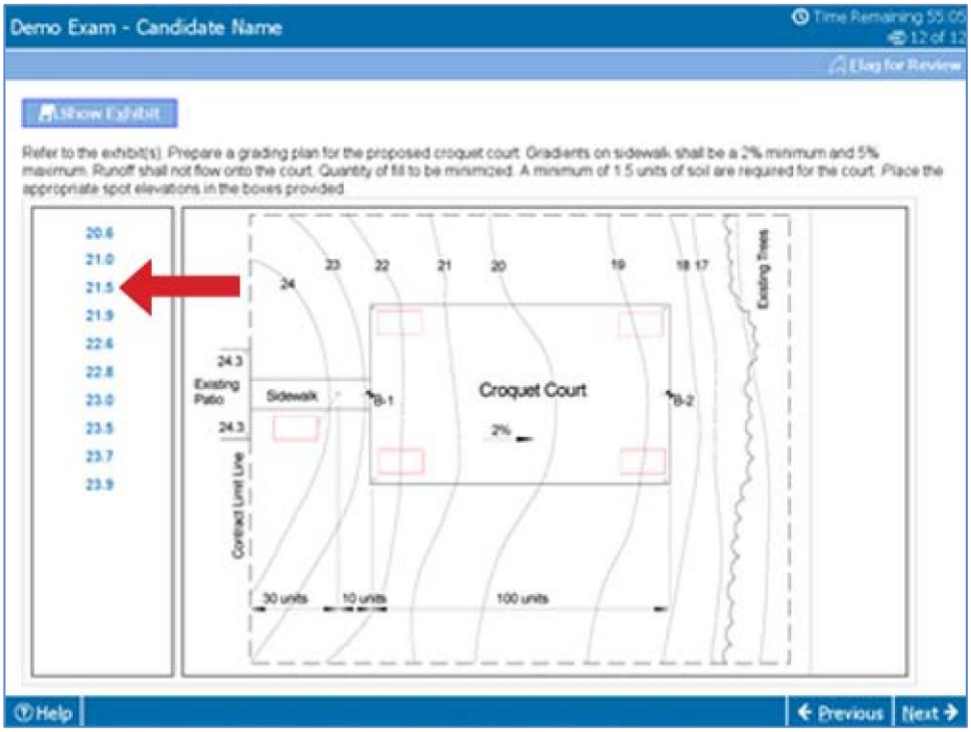
When you move the project element, additional copies of the element will remain in the project element area should you need to use multiple copies of the same project element.



Important Notice: Not all the project elements may be required to answer the item.

Place the appropriate project element(s) on the site and leave the remaining project elements within the project element area.

Placing unnecessary project elements on the site will result in an incorrect answer for the item.



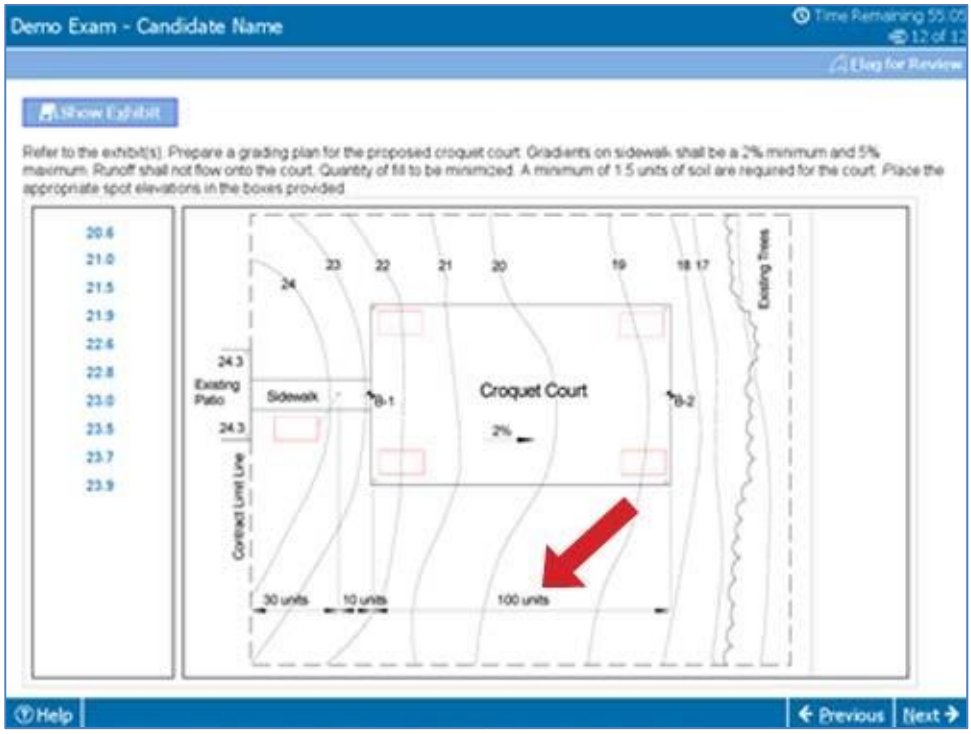
Measurement

Due to the fact that you will be unable to measure components in an item, dimensions will be provided to you should you need them for calculations.

To avoid confusion between Imperial measurement (feet and inches) and Metric, many items will be dimensioned using a generic scale **(units).**

Use the number of units to calculate specific measurements that may be needed to answer the item.

Do not try to convert the "units" to either feet or meters to answer the item.



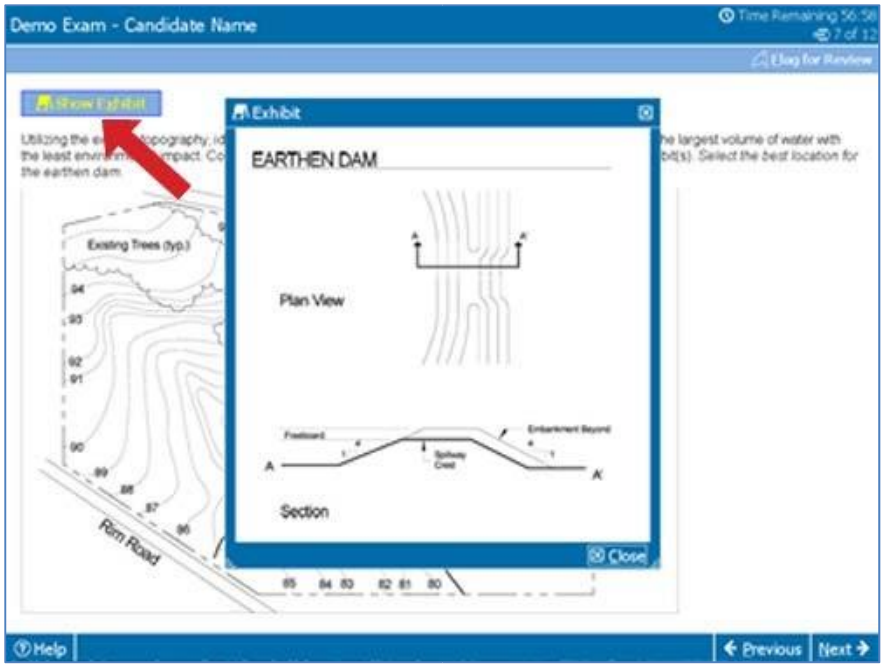
Exhibits

In order to answer some of the items, you will need to consider additional information called exhibits.

Should additional information be required the item will direct you to **"Refer to the exhibit(s)".**

To see the exhibits, move your mouse cursor over the **Show Exhibit button** and click the left mouse button.

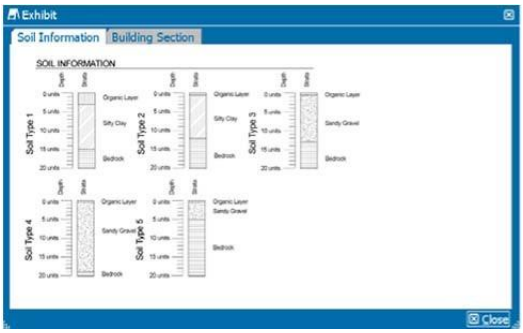
This will result in a pop-up window appearing that contains one or more tabs of stimuli information that you will need to review prior to answering the item.



The exhibit window can be moved and resized to allow you to review the exhibit information at the same time as you review the item.

Should there be multiple exhibits, move your mouse cursor to each tab at the top of the exhibit window and click the left mouse button to open additional exhibit screens.

To close the exhibit window, click on the "X" in the upper right corner of the exhibit window.

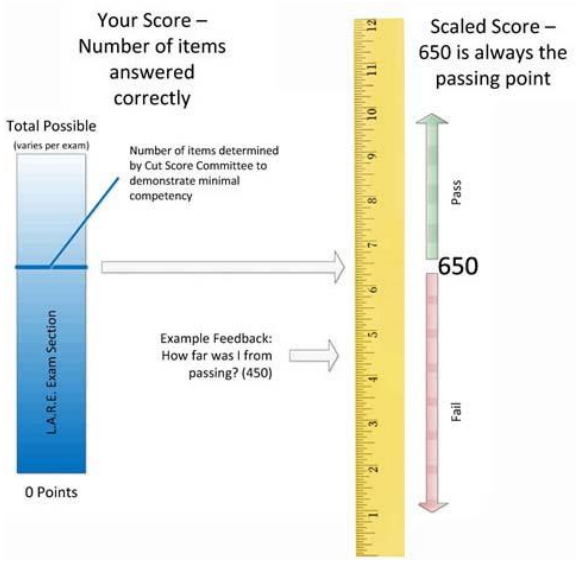


Exam Results Reporting

Exam results for all sections of the L.A.R.E. are not reported immediately after completing the exam due to the analysis performed on the items to ensure that the items are correct, fair and accurately address the subject matter being tested. CLARB's testing experts look at the difficulty of the items, the response patterns by candidates and the ability of the items to discriminate between candidates of differing ability levels.

Exam results for all sections of the L.A.R.E. will be available on the CLARB website approximately 6 weeks after the last day of the exam administration.

Exam results are reported as pass or fail. If a "Fail" result is received, a number representing a scaled score will also be received. The scaled score provides candidates with a performance indicator demonstrating how close they were to the passing point. For each section, candidates must obtain a scaled score of at least 650 to pass. A scaled score of 640, for example, would indicate that a candidate was close to passing.



CLARB utilizes scaled scoring for two key reasons:

1. To report performance on the L.A.R.E. in a consistent way even though the number of items in each section varies, and;
2. It is a "best practice" of the testing industry.

Validity of Scores

The CLARB program assures the validity of scores reported for CLARB examinations by every means available. Your scores may be classified as indeterminate if the scores are at or above the passing level and the CLARB program cannot certify that they represent a valid measure of your knowledge or competence as sampled by the examination. The CLARB program may make such a determination when aberrancies in performance are detected for which there is no reasonable and satisfactory explanation. A classification of indeterminate may result from exam impropriety (see following section) or from other factors, such as unexplained inconsistency in performance.

The performance of all examinees is monitored and may be analyzed statistically to detect aberrancies indicating that your scores may be indeterminate. In addition, evidence of exam impropriety may suggest that your scores do not represent a valid measure of your knowledge or competence as sampled by the examination. In these circumstances, your score report may be delayed, pending completion of further analysis and investigation. If your score report is delayed, you will be notified. You will have an opportunity to provide information that you consider relevant. After review and analysis of all available information, scores will be classified as valid and will be reported, or scores will be classified as indeterminate. If the scores are classified as indeterminate, you will be advised of the options for retaking the examination. Scores classified as indeterminate do not appear on your record; rather, an annotation indicates that the scores were classified as indeterminate. Scores classified as indeterminate will not be reported to anyone. Anyone who has received a report of scores that are later classified as indeterminate will be notified of the indeterminate classification. If exam impropriety appears to have contributed to a decision that your scores are indeterminate, action will also be taken as described in the Examples of Exam Impropriety section.

Completing the L.A.R.E.

If a candidate fails any section of the exam, he/she needs to retake that section in future administration(s) in an attempt to obtain a passing score. A candidate may usually retake a section of the exam as many times as necessary in order to achieve a passing score; however, some jurisdictions limit the number of retakes, so this information should be verified with the registration board in the jurisdiction where you are seeking initial licensure.

L.A.R.E. Rules of Conduct

If a candidate knowingly violates or attempts to circumvent the rules and procedures of the exam as established by CLARB, the results of that exam may not be scored or accepted. CLARB reserves the right to take remedial action—including, but not limited to, barring the candidate from future testing, canceling the candidate's exam scores, or filing of civil or criminal charges. If a candidate's scores are canceled, they will not be reported and the associated fees will not be refunded. The candidate will be notified of the alleged violation(s) and be given an opportunity to provide evidence to the contrary and reasons that the exam score(s) should not be canceled or withheld.

Exam impropriety includes any action by applicants, examiners, potential applicants or others when solicited by an applicant and/or examinee that subverts or attempts to subvert the examination process.

Although tests are administered under strict supervision and security measures, testing irregularities may sometimes occur. Candidates are encouraged to contact CLARB as soon as possible to report any behavior that violates exam standards and may lead to an invalid score. All information will be held in strict confidence.

Examples of Exam Impropriety

The following are examples of exam improprieties. This list is not meant to be exhaustive and CLARB reserves the right to take action on other items considered to be an attempt to gain unfair advantage or circumvent the intent of the exam.

- attempting to take the exam for someone else or having someone else take the exam or any portion of the exam for you
- failing to provide acceptable identification
- obtaining improper access to the exam, a part of the exam or information about the exam
- using a telephone or cellular phone during the exam session or during breaks
- using any aids in connection with the exam other than those provided at the exam site; for example: pagers, beepers, calculators, watch calculators, books, pamphlets, notes, stereos or radios with headphones, telephones, cell phones, watch alarms (including those with flashing lights or alarm sounds), stop watches, dictionaries, translators and any hand-held electronic or photographic devices
- creating a disturbance (disruptive behavior in any form will not be tolerated; the exam administrator/supervisor has sole discretion in determining what constitutes disruptive behavior)
- attempting to give or receive assistance or otherwise communicate in any manner with another person about the content of the exam during the administration, during breaks or after the exam
- removing or attempting to remove exam content from the test center; under no circumstances may exam content or any part of the exam content be removed, reproduced and/or disclosed by any means (e.g., hard copy, verbally, electronically) to any person or entity
- tampering with a computer
- attempting to remove scratch paper from the exam room
- bringing a weapon or firearm into the computer laboratory
- leaving the exam center vicinity during the exam session or during breaks

- leaving the exam room without permission
- taking excessive or extended unscheduled breaks during the test session; exam center administrator supervisors are required to strictly monitor unscheduled breaks and report examinees that take excessive or extended breaks
- failing to follow any of the exam administration regulations contained in any examination orientation guides, given by the exam administrator/supervisor, or specified in any exam materials
- seeking and/or obtaining unauthorized access to examination material
- providing false information or making false statements on or in connection with application forms, or other CLARB related documents
- taking an examination without being eligible for it or attempting to do so
- making notes of any kind while in the secure areas of the test center except on the writing material provided at the test center for this purpose
- failing to adhere to any CLARB policy, procedure or rule, including instructions of the test center staff
- verbal or physical harassment of test center staff or other disruptive or unprofessional behavior at the test center (the exam administrator/supervisor has the sole discretion in determining what constitutes disruptive and/or unprofessional behavior)
- possessing any unauthorized material, including but not limited to, photographic equipment, communication or recording devices, electronic paging devices, cellular telephones, dictionaries, translators, books, notes, calculators, watch alarms, stereos or radios with or without headphones or stop watches
- altering or misrepresenting examination scores
- any unauthorized reproduction by any means, including reconstruction through memorization, and/or dissemination of copyrighted examination materials by any means, including the Internet
- communicating or attempting to communicate about specific test items, cases, and/or answers with another examinee, potential examinee, or formal or informal test preparation group at any time before, during or after an examination
- revealing examination content to anyone during, or after the exam administration, including but not limited to social networking sites and other online forums

NOTE: Looking in the direction of another examinee's computer monitor or talking to another examinee during the examination may be reported as evidence of giving, receiving or obtaining unauthorized assistance. The report may result in a determination of exam impropriety. Discussion of examination content or answers on the Internet may also result in a determination of exam impropriety.

If information received suggests that exam impropriety has occurred, statistical analyses may be conducted and additional information may be gathered.

You will be advised of the alleged exam impropriety, and you will have an opportunity to provide information that you consider relevant to the evaluation of the allegation. Your scores may be withheld, if they have not been reported previously. Applications may not be processed, and you may not be permitted to take subsequent examinations until a final decision regarding exam impropriety is made. If it is determined that you engaged in exam impropriety, information regarding this determination becomes part of your CLARB

record. Your score report (if applicable) and CLARB record will contain a notation regarding the exam impropriety. Information about the exam impropriety will be provided to third parties that receive or have received your CLARB record. If it is determined that the exam impropriety is egregious and/or threatens the integrity of the examination system, you may be barred from future CLARB examinations and/or special administrative procedures may be implemented for your future examinations. The CLARB program also reserves the right to take such actions when information regarding behavior of examinees on predecessor examinations indicates such actions may be necessary to ensure the security of the L.A.R.E.

Examination Materials and What to Expect at the Testing Center

Security

Learn more about Pearson VUE's security procedures.

Required

You must present two forms of valid and current identification when arriving at the testing center.

At least one must be an Official ID with a photograph and the other may be a secondary ID.

The name on the ID's must match the name under which you registered for the exam.

If you have had a name change between exam registration and administration, you must contact CLARB prior to arriving at the test center. You will be required to bring validation of your name change with you to the test center.

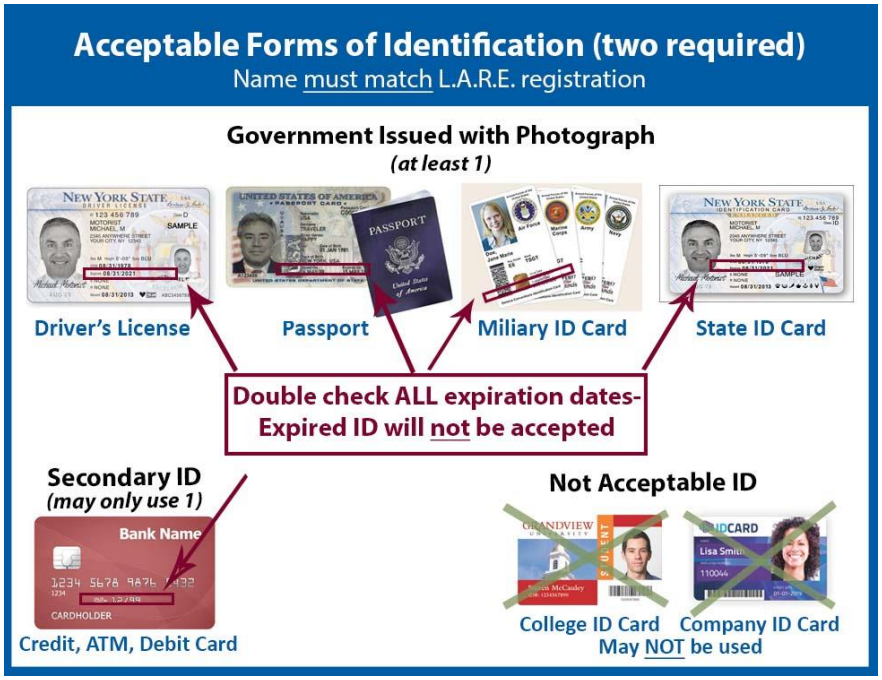
Acceptable forms of government-issued ID with photograph:

- Driver's license
- Military ID card
- Valid passport
- State ID card

Acceptable forms of secondary ID:

- Credit card
- Check, ATM or Debit card

NOTE: If the test center questions the ID presented, you may be asked for additional proof of identification. Access to the examination may be refused if the test center staff believes you have not sufficiently proven your identity. You will NOT be admitted into the examination without proper identification and there will be no refund of your test fee(s).



Provided

- A calculator will be provided at the test center. Please request a calculator if you are not provided one upon check-in to the testing room.
- The test proctor will provide a notebook and marker to use as scratch paper.

Prohibited

- No items including reference material, calculators, pencils, pens, paper, drafting supplies, etc. will be allowed in the testing room.
- No personal items (including purses, fanny packs, food items) will be allowed in the testing room. Personal items must be left in a locker in the test center for test security purposes, so please limit what you bring to the examination center.
- You may not bring cellular phones, pagers, devices with a computer memory chip or any device with an alphanumeric keyboard (e.g., a language translation tool) to the test site.

Additional Reference Information

Rules of Professional Conduct

Competence

(A) In engaging in the practice of landscape architecture, a registered landscape architect shall act with reasonable care and competence and shall apply the technical knowledge and skill which are ordinarily applied by registered landscape architects of good standing, practicing in the same locality.

(B) In designing a project, a registered landscape architect shall take into account all applicable state and municipal building laws and regulations. While a registered landscape architect may rely on the advice of other professionals, (e.g., attorneys, engineers and other qualified persons) as to the intent and meaning of such regulations, once having obtained such advice, a registered landscape architect shall not knowingly design a project in violation of such laws and regulations.

(C) A registered landscape architect shall undertake to perform professional services only when he or she, together with those whom the registered landscape architect may engage as consultants, is qualified by education, training and experience in the specific technical areas involved.

(D) No individual shall be permitted to engage in the practice of landscape architecture if, in the Board's judgment, such individual's professional competence is substantially impaired by physical or mental disabilities.

Conflict of Interest

(A) A registered landscape architect shall not accept compensation for his or her services from more than one party on a project unless the circumstances are fully disclosed to and agreed to by (such disclosure and agreement to be in writing) all interested parties.

(B) If a registered landscape architect has any business association or direct or indirect financial interest which is substantial enough to influence his or her judgment in connection with his or her performance of professional services, the registered landscape architect shall fully disclose in writing to his or her client or employer the nature of the business association or financial interest, and, if the client of the employer objects to such association or financial interest, the registered landscape architect will either terminate such association or interest or offer to give up the commission or employment.

(C) A registered landscape architect shall not solicit or accept compensation from material or equipment suppliers in return for specifying or endorsing their products.

(D) When acting as the interpreter of building contract documents and the judge of contract performance, a registered landscape architect shall render decisions impartially, favoring neither party to the contract.

Full Disclosure

(A) A registered landscape architect, making public statements on landscape architectural questions, shall disclose when he or she is being compensated for making such statements.

(B) A registered landscape architect shall accurately represent to a prospective or existing client or employer his or her qualifications and the scope of his or her responsibility in connection with work for which he or she is claiming credit.

(C) If, in the course of his or her work on a project, a registered landscape architect becomes aware of a decision taken by his or her employer or client, against such registered landscape architect's advice, which violates applicable state or municipal building laws and regulations and which will, in the registered landscape architect's judgment, materially and adversely affect the safety to the public of the finished project, the registered landscape architect shall:

1. report the decision to the local building inspector or other public official charged with the enforcement of the applicable state, provincial or municipal building laws and regulations;
2. refuse to consent to the decision; and
3. in circumstances where the registered landscape architect reasonably believes that other such decisions will be taken, notwithstanding his or her objections, terminate his or her services with respect to the project. In the case of a termination in accordance with this clause (3), the registered landscape architect shall have no liability to his or her client or employer on account of such termination.

(D) A registered landscape architect shall not deliberately make a materially false statement or deliberately fail to disclose a material fact requested in connection with his or her application for a registration or renewal thereof.

(E) A registered landscape architect shall not assist the application for a registration of an individual known by the registered landscape architect to be unqualified in respect to education, training, experience or character.

(F) A registered landscape architect possessing knowledge of a violation of the provisions set forth in these regulations by another registered landscape architect shall report such knowledge to the Board.

Compliance with Laws

(A) A registered landscape architect shall not, while engaging in the practice of landscape architecture, knowingly violate any state, provincial or federal criminal law.

(B) A registered landscape architect shall neither offer nor make any payment or gift to a government official (whether elected or appointed) with the intent of influencing the official's judgment in connection with a prospective or existing project in which the registered landscape architect is interested.

(C) A registered landscape architect shall comply with the registration laws and regulations governing his or her professional practice in any jurisdiction.

Professional Conduct

(A) Each office in a jurisdiction maintained for the preparation of drawings, specifications, reports or other professional landscape architectural work shall have a registered landscape architect resident and regularly employed in that office having direct supervision of such work.

(B) A registered landscape architect shall not sign or seal drawings, specifications, reports or other professional work for which he or she does not have direct professional knowledge and direct supervisory control; provided, however, that in the case of the portions of such professional work prepared by the registered landscape architect's consultants, registered in this jurisdiction, the registered landscape architect may sign or seal that portion of the professional work if the registered landscape architect has reviewed such portion, has coordinated its preparation, and intends to be responsible for its adequacy.

(C) A registered landscape architect shall neither offer nor make any gifts, other than gifts of nominal value (including, for example, reasonable entertainment and hospitality), with the intent of influencing the judgment of an existing or prospective client in connection with a project in which the registered landscape architect is interested.

(D) A registered landscape architect shall not engage in conduct involving fraud or wanton disregard of the rights of others.

Fasteners and Reinforcing List (for Section 4)

The following is a list of fasteners and reinforcing materials that may appear in questions in Section 4 of the L.A.R.E. This list has been prepared by the CLARB Examination Committee. While the Committee believes this list will be of assistance to you in preparing for the L.A.R.E., no representation is made that a complete understanding of the materials on this list will ensure a passing grade on the examination, and no representation is made that the examination questions will be limited in scope to the list shown.

BOLTS:
Carriage Bolt Assembly
Eye Bolt
J-Bolt Assembly
L-shaped Anchor Bolt Assembly
Lag Bolt
Lag Bolt with Expansion Shield
Lag Bolt with Fiber Plug
Lag Bolt with Lead Shield
Machine Bolt Assembly
Machine Bolt with Expansion Shield
Threaded Rod Assembly
Toggle Bolt Assembly

SCREWS AND NAILS:
Cement Nail
Common Nail
Finish Nail
Hook Nail
Machine Screw
Masonry Nail
Spike
Wood Screw

METAL BRACKETS:
Joist Hanger
Post Anchor
Post Cap Tie Plate
Strap Hanger
Plate Anchor

MISCELLANEOUS FASTENERS:
Construction Adhesive
Drive Anchor
Duct Tape
Epoxy
Masonry Wall Tie
Mastic
Mortar
Rivet
Snap Tie
Solder
Staple
Z-anchor

REINFORCEMENT:
#3 Rebar
#4 Rebar
#6 Rebar
#8 Rebar
Cavity Wall Tie
Fiber Mesh
Geosynthetic Reinforcing Grid
Steel Dowel
Truss Design Reinforcement
Welded Wire Mesh (WWM)

Materials List (for Section 3 and 4)

The following is a list of materials that may appear in questions in Section 3 and/or 4 of the L.A.R.E. This list has been prepared by the CLARB Examination Committee. While the Committee believes this list will be of assistance to you in preparing for the L.A.R.E., no representation is made that a complete understanding of the materials on this list will ensure a passing grade on the examination, and no representation is made that the examination questions will be limited in scope to the list shown.

Angle Iron
Asphalt (Bituminous Concrete)
Brass Pipe
Brick
Butt Hinge
Caulk
Ceramic Tile
Concrete
Concrete Masonry Units (CMU)
Concrete Pavers
Copper Pipe
Epoxy Sealer
Expansion Joint Material
Filter Fabric
Flagstone
Flashing
Flat Steel
Floor Drain
Foam Insulation
Galvanized Electrical Conduit
Gate Latch Assembly
Geotextile grid
Granite
Gravel (crushed stone, granular material, aggregate, peagravel)
Grout (non-shrink)
Joint Sealing Compound
Mastic
Metal Sleeve
Mortar
Mulch
Perforated PVC Pipe
Polyethylene Pipe
Porcelain Enamel
Portland Cement
Prefabricated Wall Drain
PVC Pipe
Sand
Soil
Soil Cement
Steel Tubing - Round
Steel Tubing - Square
Steel Washers
Stone
Stone Dust (Fines)
Strap Hinge
Stucco
Tar
Wall Reinforcement
Waterproofing (Bituminous)
Waterstop
Wood (Lumber)
Wrought Iron

Lumber/Timber List (for Section 4)

The following is a list of lumber/timber that may appear in questions in Section 4 of the L.A.R.E. This list has been prepared by the CLARB Examination Committee. While the Committee believes this list will be of assistance to you in preparing for the L.A.R.E., no representation is made that a complete understanding of the materials on this list will ensure a passing grade on the examination, and no representation is made that the examination questions will be limited in scope to the list shown.

1x4 [25x100]
1x6 [25x150]
1x8 [25x200]
1x10 [25x250]
1x12 [25x300]
5/4x6 [30x150]
2x2 [50x50]
2x4 [50x100]
2x6 [50x150]
2x8 [50x200]
2x10 [50x250]
2x12 [50x300]
4x4 [100x100]
4x6 [100x150]
4x8 [100x200]
4x10 [100x250]
4x12 [100x300]
6x6 [150x150]
6x8 [150x200]
8x8 [200x200]

Wood Member Sizing Chart (for Section 4)

The following are charts that may appear in questions in Section 4 of the L.A.R.E. This material will be mbedded within any question that requires use of the chart.

For external wood structures with uniform joist and beam spacing.

Maximum Allowable Spans for Spaced Boards

	Laid Flat			
	1 x 4 [25 x 100]	5/4 x 6 [30 x 150]	2 x 4 [50 x 100]	2 x 6 [50 x 150]
For Decking	12" [30cm]	16" [40cm]	24" [60cm]	24" [60cm]
For Benches	NA	NA	36" [100cm]	36" [100cm]

Maximum Allowable Spans for Joists

Joist Size	Joist Spacing		
	16" [40cm]	24" [60cm]	32" [80cm]
2 x 6 [50 x 150]	10' [3.0m]	8' [2.4m]	6' [1.8m]
2 x 8 [50 x 200]	12' [3.6m]	10' [3.0m]	8' [2.4m]
2 x 10 [50 x 250]	16' [4.8m]	14' [4.2m]	10' [3.0m]

Minimum Beam Sizes and Allowable Beam Spans

Spacing Between Beams	4' [1.2m]	6' [1.8m]	8' [2.4m]	10'[3.0m]	12'[3.6m]	
	—	—	—	—	—	Beam Size*
	6' [1.8m]	6' [1.8m]	—	—	—	4 x 6 [100 x 150]
	10' [3.0m]	8' [2.4m]	6' [1.8m]	6' [1.8m]	—	4 x 8 [100 x 200]
	12' [3.6m]	10' [3.0m]	8' [2.4m]	8' [2.4m]	6' [1.8m]	4 x 10 [100 x 250]
	12' [3.6m]	12' [3.6m]	10' [3.0m]	10' [3.0m]	8' [2.4m]	4 x 12 [100 x 300]
	Maximum Distance Between Posts (o.c.)					

* - Two (2) 2 by's [50's] are acceptable.

NOTE: Maximum cantilever for joists and beams is 24" [60cm].

Subsurface Drainage

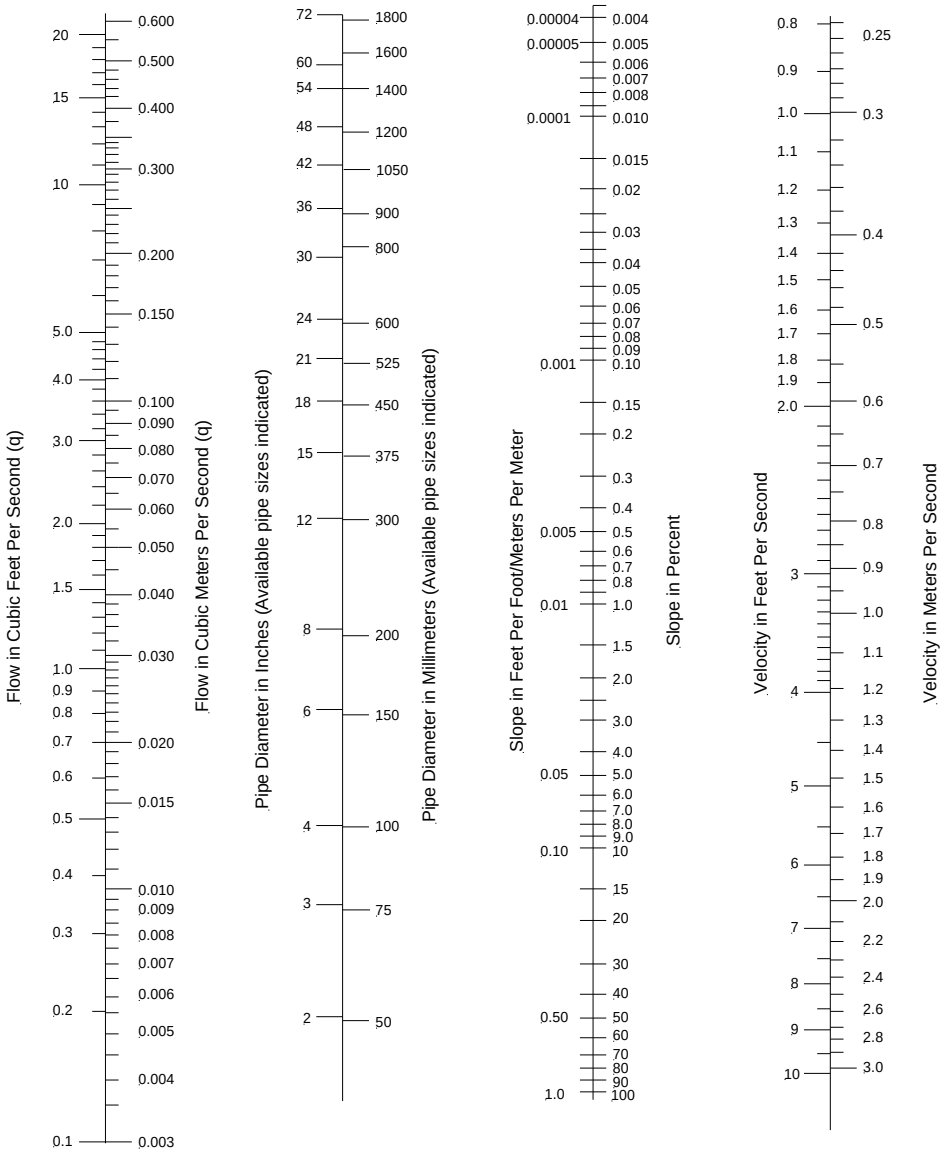
The following information may appear in questions used on the L.A.R.E. in order to answer items pertaining to site drainage systems.

Rational Method formula:

q=CiA [q=CiA/360]

q = Quantity of runoff in cubic feet per second [cubic metres per second].
C = Runoff coefficient.
i = Intensity of rainfall in inches per hour [millimetres per hour].
A = Area in acres [hectares].

Nomograph for Circular Pipes Flowing Full (Manning's Equation - Concrete Pipe n=0.013) (for Section 4)



For Additional Information

For additional information on the L.A.R.E. or any other service CLARB offers, please visit the CLARB website or contact us:

The Council of Landscape Architectural Registration Boards
1840 Michael Faraday Drive
Suite 200
Reston, VA 20190

info@clarb.org
(571) 432-0332

Frequently Asked Questions about the Exam Procedure

Q. - How do I register for the exam?

A.- All candidates will register for the exam via the CLARB website.

Q. - How do I know if I am eligible to take the L.A.R.E.?

A. - You can verify your eligibility via the CLARB Eligibility Map on the CLARB website.

Q. - Why is the Council Record part of the exam registration process?

A. - Starting a Council Record during the exam process ensures that CLARB is collecting, verifying and storing the information that licensure boards need from you in order to apply to take the exam and be evaluated for licensure. The licensure process is simplified when candidates and licensure boards use the Council Record. The Council Record is not just your exam application. It is the field-recognized and preferred tool for tracking all of your professional accomplishments and can be used at every step of your career.

Q. - Do I have to "complete" the Council Record during the exam registration process?

A. - Candidates who need to obtain pre-approval should start and complete the Record so they can transmit their Record to their licensure board for approval. (Exam candidates may transmit their Record for free in support of exam application.) Candidates who do not need to obtain pre-approval only need to start the Council Record and submit their education information prior to testing. The remainder of the Record can be completed during testing so that it can be used in support of initial licensure application upon completion of the exam.

Q. Can I take some sections in one state or province and the remainder in another?

A. Eligibility to take the L.A.R.E. varies by jurisdiction. You will want to verify your eligibility prior to moving from one jurisdiction to another.

Q. Why can't exams be offered year-round now that they are on computer?

A. CLARB has a limited bank of items and to maintain security and ensure accuracy and fairness in testing we can only offer the exam in a few windows during the year.

Q. Am I able to take water or food into the testing center?

A. You are not permitted to bring anything into the actual exam delivery room with you, but you are permitted to take breaks so that you can get a drink of water or a snack from your locker. Be sure that all items are in clear packaging free of any labels or markings.

Q. - Are practice tests available for all sections of the exam?

A. - Due to the fact that CLARB produces the examination which is used by licensure Boards to determine qualifications for licensure, CLARB does not provide preparatory information to assist candidates in passing the examination. CLARB has partnered with ASLA to provide materials to help prepare for the exam and you can find a link to the ASLA materials in the preparation section of our website.

Q. - When should I arrive at the test center?

A. - Plan to arrive at least 30 minutes before the scheduled appointment to allow time for check-in procedures. Candidates who arrive late will NOT be allowed to take the examination.

Q. - When will I get my exam results?

A. - Your exam results will be posted on the CLARB website approximately 6 weeks following the last day of the administration. CLARB will notify candidates via email and social media when exam results are available.

Q. - Can I bring a handheld calculator to use during the examination?

A. - No. The Pearson VUE test center will provide a calculator when you check-in for the exam. If you are not provided a calculator upon entry to the testing room, be sure to request a calculator for the examination. Should the proctor indicate that you are not permitted a calculator, ask them to contact CLARB immediately.

Q. Can I bring paper and pencil to the test center to sketch on to help me answer the questions?

A. No. You are not permitted to bring anything into the test center. A notebook and marker will be provided for you by the test center.

Q. - Can I cancel the exam?

A. - CLARB has a cancellation policy that requires candidates to cancel their exam prior to the posted cancellation deadline. For details on the CLARB cancellation policy, please visit the "Exam Dates & Deadlines" page of the CLARB website. Please note: exams cannot be rescheduled or postponed to future administrations.

Q. - What happens if I miss my examination due to a family emergency?

A. - Candidates can apply for a refund under the CLARB Good Cause policy. CLARB's "Good Cause" policy may apply if you are unable to attend the exam administration due to severe physical or emotional hardship. Contact CLARB to find out what documentation you need to submit to have your case reviewed in accordance with this policy. Candidates who are approved under this policy will receive a refund to the original form of payment less a 5% cancellation fee. All requests for Good Cause must be received within 60 days of the exam administration.

Q. - What do I do if I am not permitted to test by Pearson VUE employees for any reason?

A. - Immediately contact the CLARB office and explain your situation. CLARB staff may be able to remedy the situation if contacted immediately. Do **not** leave the test center.

Q. - What do I do if I experience an issue such as a computer software problem that does not allow me to complete the exam?

A. - Report the incident to the onsite Pearson Vue staff immediately. Be sure to follow up with CLARB regarding the incident. CLARB staff may be able to remedy the situation if contacted immediately.

Q&As About Exam Items

Q. How will I be tested on orientation of elements in a drag and place item?

A. The elements in a drag and place item cannot be manipulated in any way. To test on orientation, you would have multiple elements in different orientation and would need to select the appropriate element and place it on the site (i.e., one tennis court oriented N/S and one oriented E/W).

Q. On a drag and place question, if I am required to place two elements, but only get one correct how will I be scored?

A. Each question is worth one point and you need to get the entirety of the question correct to achieve a point. If you placed only one of the two elements correctly, you would receive no point for that question.

Q. Are there multiple correct answers for the advanced item types?

A. The item writer creates a scoring "area" for the element that relates to the appropriate location for that element. The location can be very specific (only one correct location) or very generic like anywhere in soil type A.

Q. If my drag and place element is 75% or so within the scoring area, will I get a point for that item?

A. Any margin for error is already built into the scoring area by the item writer. The entire element must fit fully within the scoring area to receive credit.

Q. Are all questions on the test of the same value?

A. All questions, no matter the type, are worth one point each. For example, a drag and place item that requires you to locate six elements is the same value as a multiple-choice item that requires one answer choice – one point.

Q. How are multiple response items graded? If I select three items correctly and there are supposed to be four, do I get any credit?

A. In all item types, including the multiple response, you must get all of the answers correct to get one point. There is no partial credit given if a portion of the answers are correct.

Q. How are wood sizing questions going to be handled? Are you going to include the wood sizing chart within the problem?

A. All supporting material needed to answer an item will be included either on the item screen itself or within a pop-up "exhibit" window accessible through the "Show Exhibit" button found in the upper left portion of the item.

Q. I understand that measurement in feet or meters will be replaced with “units” in the advanced item types. Will units be used in all of the items?

A. Some of the multiple-choice items and multiple response items that test on codes like accessibility codes may have measurement in Imperial and metric. The item will include Imperial measurement (i.e., feet, inches) and metric measurement in brackets (e.g., [2.3 m]).

Q. What if I drag a contour in a drag and place item and it does not match up exactly with the existing contours?

A. Contour locations need to be fairly accurate, but the item writer does provide a margin for error due to the nature of placing the element with a computer mouse.

Appendix D

APELSCIDLA Board Data on Investigated Complaints and Regulant Populations

Subject: FW: VA-ASLA Legislative Committee Schedules Meeting with Governor's Office NOT FOR DISTRIBUTION

Date: Tuesday, November 22, 2011 11:34:28 AM ET

From: Robert McGinnis

To: Robert McGinnis

From: Nosbisch, Kate (DPOR) [mailto:kate.Nosbisch@dpor.virginia.gov]

Sent: Monday, November 21, 2011 11:22 AM
To: Andy Scherzer
Subject: RE: VA-ASLA Legislative Committee Schedules Meeting with Governor's Office NOT FOR DISTRIBUTION

Calendar year 2010:

The complaints below represent a breakdown by profession that were docketed between January 1, 2010-December 31, 2010 of disciplinary and application cases. There were another 24 cases for unlicensed activity that at that time were assigned to the individual profession. Please note our licensee count varies month to month however the count listed below represents a snapshot of the number of licensees on January 3, 2011.

Landscape Architects

1 Complaint (closed compliance obtained)

0 Disciplinary Action Taken

844 Licensees as of 1/3/11

Architects

10 Complaints

0 Disciplinary Action Taken

6,941 Licensees as of 1/3/11

Professional Engineers

39 Complaints

6 Disciplinary Action Taken

26,502 Licensees as of 1/3/11

Land Surveyors

7 Complaints

1 Disciplinary Action Taken

1,351 Licensees as of 1/3/11

Land Surveyor Bs

5 Complaints

0 Disciplinary Action Taken

142 Licensees as of 1/3/11

Surveyor Photogrammetrist

6 Complaints

0 Disciplinary Action Taken

165 Licensees as of 1/3/11

Interior Designers

2 Complaints

0 Disciplinary Action Taken

489 Licensees as of 1/3/11

I hope this information is helpful to you.

Most sincerely,

Kate

VA APELSCIDLA Board Closed Investigations Breakdown by Profession 2/2015 through 2/25/2020

CY 2015	INVESTIGATIONS CLOSED	ORDERS ENTERED
0401	3	2
0402	13	10
0403	2	1
0404	0	0
0405	0	0
0406	0	0
0407	6	1
0408	0	0
0410	0	0
0411	0	0
0412	0	0
0413	0	0
0414	0	0
Unlicensed	20	0
No respondent	7	0
TOTALS	**51**	**14**

CY 2016	INVESTIGATIONS CLOSED	ORDERS ENTERED
0401	1	0
0402	13	3
0403	3	1
0404	0	0
0405	1	0
0406	0	0
0407	1	0
0408	0	0
0410	0	0
0411	1	0
0412	0	0
0413	0	0
0414	0	0
Unlicensed	18	0
No respondent	17	0
TOTAL	**55**	**4**

CY 2017	INVESTIGATIONS CLOSED	ORDERS ENTERED
0401	3	0
0402	10	3
0403	2	1
0404	0	0
0405	1	0
0406	0	0
0407	1	0
0408	0	0
0410	0	0
0411	0	0
0412	0	0
0413	0	0
0414	0	0
Unlicensed	11	0
No respondent	19	0
TOTAL	**47**	**4**

0401 – Architects
0402 – Professional Engineers
0403 – Land Surveyors
0404 – Land Surveyors B
0405 – Professional Corporations
0406 – Landscape Architects
0407 – Business Entities
0408 – Surveyor Photogrammetrists
0410 – Professional Corporation Branch Office
0411 – Business Entity Branch Offices
0412 – Certified Interior Designer
0413 – Professional LLCs
0414 – Professional LLC Branch Offices

VA APELSCIDLA Board Closed Investigations Breakdown by Profession 2/2015 through 2/25/2020

CY 2018	INVESTIGATIONS CLOSED	ORDERS ENTERED
0401	3	2
0402	17	2
0403	4	1
0404	1	1
0405	0	0
0406	0	0
0407	2	0
0408	0	0
0410	0	0
0411	0	0
0412	0	0
0413	2	1
0414	0	0
Unlicensed	10	0
No Respondent	20	0
TOTAL	**59**	**7**

CY 2019	INVESTIGATIONS CLOSED	ORDERS ENTERED
0401	3	1
0402	17	6
0403	2	0
0404	1	1
0405	0	0
0406	0	0
0407	0	0
0408	0	0
0410	0	0
0411	0	0
0412	0	0
0413	0	0
0414	0	0
Unlicensed	12	0
No Respondent	29	0
TOTAL	**64**	**8**

CY 2020	INVESTIGATIONS CLOSED	ORDERS ENTERED
0401	1	1
0402	2	0
0403	1	0
0404	0	0
0405	0	0
0406	0	0
0407	1	0
0408	0	0
0410	0	0
0411	0	0
0412	0	0
0413	0	0
0414	0	0
Unlicensed	1	0
No Respondent	2	0
TOTAL	**8**	**1**

0401 – Architects
0402 – Professional Engineers
0403 – Land Surveyors
0404 – Land Surveyors B
0405 – Professional Corporations
0406 – Landscape Architects
0407 – Business Entities
0408 – Surveyor Photogrammetrists
0410 – Professional Corporation Branch Office
0411 – Business Entity Branch Offices
0412 – Certified Interior Designer
0413 – Professional LLCs
0414 – Professional LLC Branch Offices

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Complaints: 804-367-8504

TOTAL CURRENT REGULANT POPULATION AS OF JANUARY 1, 2015

303,623

Regulant population numbers are effective for the dates shown only.

1/1/15	12/1/14	11/1/14	
3,931	3,896	3,868	APELSCIDLA Businesses
7,117	7,103	7,106	Architects
1,575	1,544	1,513	Asbestos Workers
1,394	1,388	1,377	Asbestos Supervisors
689	691	691	Asbestos Inspectors
169	168	168	Asbestos Management Planners
188	187	192	Asbestos Project Designers
201	198	194	Asbestos Contractors
337	335	335	Asbestos Project Monitors
99	99	99	Asbestos Laboratories
1,295	1,309	1,304	Auctioneers
250	251	248	Auction Firms
3,153	3,161	3,153	Barbers
295	292	288	Barber Teachers
946	948	945	Barber Shops
81	82	83	Barber Schools
138	143	145	Body Piercers
118	121	121	Body Piercing Salon
342	329	325	Body Piercers Ear Only
72	73	73	Body Piercing Ear Only Salon
14	122	103	Boxers
4	33	32	Boxing/Wrestling Promoters
16	269	258	Box/Wrest Trainers, Seconds, Cutmen
0	2	2	Boxing/Wrestling Managers
0	1	1	Boxing/Wrestling Matchmakers
0	0	0	Boxing Events
42	50	50	Branch Pilots
93	93	94	Cemetery Companies
164	164	164	Cemeteries
1,782	1,746	1,718	Cemetery Sales Personnel
5,741	5,757	5,726	Community Associations
85	84	84	CIC Time Shares
22	22	22	CIC Time Share Exchanges
311	314	319	CIC Condominiums
181	177	181	CIC Managers
303	305	310	CIC Certificate Holders
31,307	31,289	31,324	Contractors-Class A
12,052	12,098	12,122	Contractors-Class B
16,288	16,398	16,575	Contractors-Class C
27,593	27,599	27,721	Contractors-Tradesman
1,311	1,303	1,305	Contractors-Backflow Operators
769	769	769	Contractors-Elevator Mechanics
515	512	515	Contractors-Water Well Systems Providers
2	2	2	Contractors-Accessibility Mechanic
106	105	105	Residential Building Energy Analysts
59	58	59	Residential Building Energy Analyst Firms
42,668	42,674	42,747	Cosmetologists
5,260	5,267	5,277	Cosmetology Salons
2,158	2,187	2,178	Cosmetology Instructors
115	226	227	Cosmetology Schools
27,471	27,455	27,449	Engineers

1/1/15	12/1/14	11/1/14	
355	367	372	Lead Workers
164	163	167	Lead Supervisors
73	69	68	Lead Inspectors
209	209	209	Lead Risk Assessors
41	41	41	Lead Project Designers
112	114	114	Lead Abatement Contractors
0	81	80	Martial Artists
8,448	8,530	8,549	Nail Technicians
189	188	187	Nail Technician Instructors
665	664	666	Nail Technician Salons
38	38	38	Nail Technician Schools
1,984	1,962	1,964	Opticians
300	300	298	Polygraph Examiners
5,700	5,726	5,734	Real Estate Active Associate Brokers
1,367	1,376	1,382	Real Estate Active Sole Proprietors
4,697	4,684	4,689	Real Estate Active Principal Brokers
35,176	35,166	35,140	Real Estate Active Salespersons
657	640	643	Real Estate Inactive Associate Brokers
128	121	122	Real Estate Inactive Sole Proprietors
360	359	358	Real Estate Inactive Principal Brokers
9,013	8,953	8,959	Real Estate Inactive Salespersons
647	646	641	Real Estate Firms-Branch Offices
4,696	4,685	4,684	Real Estate Firms
1,587	1,578	1,568	Real Estate Firms-Business Entities
1,379	1,383	1,389	Real Estate Firms-Sole Proprietors
573	580	556	Real Estate Course Instructors
187	187	184	Real Estate Proprietary Schools
1,688	1,688	1,679	RE Appraisers-Certified Residential
1,117	1,114	1,109	RE Appraisers-Certified General
518	527	534	RE Appraisers-Residential
74	73	73	Real Estate Appraiser Trainees
32	31	33	RE Inactive Appraiser-Certified Residential
27	26	26	RE Inactive Appraiser-Certified General
32	32	33	RE Inactive Appraiser-Licensed Residential
66	65	66	Real Estate Appraisers Certified Instructors
468	470	471	Real Estate Appraiser Businesses
49	49	49	Real Estate Appraiser Schools
132	132	131	Soil Scientists
1	2	2	Interim On-Site Soil Evaluators
19	23	23	Interim Conventional On-Site Sewage Installers
81	133	140	Interim Alternative On-Site Sewage Installers
1	3	3	Interim Conventional On-Site Sewage Operators
12	14	15	Interim Alternative On-Site Sewage Operators
364	363	362	On-Site Soil Evaluators - Alternative
37	36	34	On-Site Soil Evaluators - Conventional
124	117	113	On-Site Sewage Operators - Alternative
62	61	59	On-Site Sewage Operators - Conventional
206	165	152	On-Site Sewage System Installers - Alternative
283	273	265	On-Site Sewage System Installers - Conventional
574	586	602	Tattooers
53	3	1	Limited Term Tattooers

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1/1/15	12/1/14	11/1/14	
2,898	2,885	2,887	Estheticians
48	49	45	Esthetics Instructors
47	48	49	Esthetics Schools
1,143	1,136	1,121	Master Estheticians
162	159	159	Master Esthetics Instructors
550	554	554	Esthetics SPAs
2,446	2,389	2,410	Fair Housing Certificate Holders
8	8	9	Fair Housing Instructors
927	917	917	Geologists
684	676	672	Hearing Aid Specialists
335	329	326	Home Inspectors
511	512	506	Interior Designers
1,292	1,307	1,312	Land Surveyors
103	104	104	Land Surveyors B
142	142	141	Land Surveyor Photogrammetrists
881	895	889	Landscape Architects
5	8	6	Interim Lead Supervisor
8	6	8	Interim Lead Inspector
0	0	2	Interim Lead Risk Assessor

1/1/15	12/1/14	11/1/14	
241	249	252	Tattoo Parlors
2	2	1	Limited Term Tattoo Parlors
11	11	11	Tattooing Instructors
6	6	6	Tattooing Schools
181	185	187	Permanent Cosmetic Tattooers
4	4	4	Master Permanent Cosmetic Tattooers
41	40	40	Permanent Cosmetic Tattoo Salons
21	22	21	Permanent Cosmetic Tattoo Instructors
10	10	9	Permanent Cosmetic Tattooing Schools
685	687	686	Waste Mgt Facility Operators
2,329	2,313	2,299	Wastewater Works Operators
2,295	2,286	2,277	Waterworks Operators
81	82	83	Waxing Salons
1,746	1,757	1,760	Wax Technicians
21	21	21	Wax Technician Instructors
13	13	13	Waxing Schools
112	112	111	Wetland Delineators
47	506	476	Wrestlers
0	8	10	Wrestling Events

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TOTAL CURRENT REGULANT POPULATION AS OF JANUARY 1, 2016

304,488

Regulant population numbers are effective for the dates shown only.

1/1/16	12/1/15	11/1/15	
4,161	4,231	4,218	APELSCIDLA Businesses
7,227	7,177	7,231	Architects
1,602	1,614	1,618	Asbestos Workers
1,494	1,488	1,500	Asbestos Supervisors
678	678	671	Asbestos Inspectors
168	166	164	Asbestos Management Planners
189	190	189	Asbestos Project Designers
199	199	200	Asbestos Contractors
338	336	335	Asbestos Project Monitors
95	97	96	Asbestos Laboratories
1,263	1,268	1,272	Auctioneers
258	249	255	Auction Firms
2,987	2,986	2,988	Barbers
298	292	294	Barber Teachers
923	916	920	Barber Shops
71	69	69	Barber Schools
129	127	132	Body Piercers
110	111	113	Body Piercing Salon
385	370	375	Body Piercers Ear Only
70	69	69	Body Piercing Ear Only Salon
36	93	47	Boxers
7	33	32	Boxing/Wrestling Promoters
17	368	355	Box/Wrest Trainers, Seconds, Cutmen
1	3	3	Boxing/Wrestling Managers
1	4	4	Boxing/Wrestling Matchmakers
0	0	0	Boxing Events
37	51	51	Branch Pilots
94	94	94	Cemetery Companies
164	164	164	Cemeteries
1,892	1,890	1,933	Cemetery Sales Personnel
5,841	5,888	5,886	Community Associations
87	87	87	CIC Time Shares
20	20	20	CIC Time Share Exchanges
228	228	223	CIC Condominiums
188	185	185	CIC Managers
301	297	290	CIC Certificate Holders
31,332	31,292	31,258	Contractors-Class A
11,661	11,684	11,698	Contractors-Class B
15,373	15,420	15,464	Contractors-Class C
27,483	27,365	27,288	Contractors-Tradesman
1,312	1,304	1,310	Contractors-Backflow Operators
695	689	676	Contractors-Elevator Mechanics
494	521	530	Contractors-Water Well Systems Providers
7	7	7	Contractors-Accessibility Mechanic
105	109	109	Residential Building Energy Analysts
61	60	63	Residential Building Energy Analyst Firms
42,477	42,449	42,549	Cosmetologists
5,242	5,242	5,248	Cosmetology Salons
2,241	2,237	2,240	Cosmetology Instructors
196	193	193	Cosmetology Schools
27,922	27,738	27,745	Engineers

1/1/16	12/1/15	11/1/15	
349	337	342	Lead Workers
153	151	155	Lead Supervisors
67	68	69	Lead Inspectors
199	197	201	Lead Risk Assessors
37	37	37	Lead Project Designers
108	110	110	Lead Abatement Contractors
10	145	114	Martial Artists
8,380	8,304	8,421	Nail Technicians
198	199	197	Nail Technician Instructors
671	676	673	Nail Technician Salons
31	30	30	Nail Technician Schools
1,930	1,924	1,921	Opticians
311	309	311	Polygraph Examiners
5,644	5,649	5,660	Real Estate Active Associate Brokers
1,341	1,350	1,352	Real Estate Active Sole Proprietors
4,690	4,690	4,694	Real Estate Active Principal Brokers
36,654	36,546	36,427	Real Estate Active Salespersons
642	649	642	Real Estate Inactive Associate Brokers
104	96	96	Real Estate Inactive Sole Proprietors
355	345	350	Real Estate Inactive Principal Brokers
8,779	8,729	8,778	Real Estate Inactive Salespersons
652	650	654	Real Estate Firms-Branch Offices
4,691	4,685	4,695	Real Estate Firms
1,805	1,791	1,789	Real Estate Firms-Business Entities
1,359	1,364	1,359	Real Estate Firms-Sole Proprietors
588	595	594	Real Estate Course Instructors
178	182	180	Real Estate Proprietary Schools
1,735	1,740	1,740	RE Appraisers-Certified Residential
1,157	1,158	1,167	RE Appraisers-Certified General
468	481	481	RE Appraisers-Residential
71	71	85	Real Estate Appraiser Trainees
39	39	39	RE Inactive Appraiser-Certified Residential
26	27	30	RE Inactive Appraiser-Certified General
34	34	34	RE Inactive Appraiser-Licensed Residential
69	69	70	Real Estate Appraisers Certified Instructors
443	445	449	Real Estate Appraiser Businesses
115	109	103	Real Estate Appraisal Management Companies
49	49	49	Real Estate Appraiser Schools
128	127	125	Soil Scientists
0	0	0	Interim On-Site Soil Evaluators
0	0	0	Interim Conventional On-Site Sewage Installers
0	0	0	Interim Alternative On-Site Sewage Installers
0	0	0	Interim Conventional On-Site Sewage Operators
0	0	0	Interim Alternative On-Site Sewage Operators
348	350	348	On-Site Soil Evaluators - Alternative
44	44	43	On-Site Soil Evaluators - Conventional
147	146	146	On-Site Sewage Operators - Alternative
80	80	81	On-Site Sewage Operators - Conventional
247	246	245	On-Site Sewage System Installers - Alternative
341	342	342	On-Site Sewage System Installers - Conventional
564	566	560	Tattooers

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1/1/16	12/1/15	11/1/15	
3,038	3,025	3,034	Estheticians
55	52	51	Esthetics Instructors
47	47	48	Esthetics Schools
1,216	1,220	1,233	Master Estheticians
183	178	179	Master Esthetics Instructors
547	549	556	Esthetics SPAs
2,579	2,613	2,588	Fair Housing Certificate Holders
8	8	8	Fair Housing Instructors
911	896	889	Geologists
681	656	655	Hearing Aid Specialists
363	361	359	Home Inspectors
504	503	502	Interior Designers
1,290	1,312	1,303	Land Surveyors
86	86	86	Land Surveyors B
135	137	137	Land Surveyor Photogrammetrists
882	879	873	Landscape Architects
7	7	6	Interim Lead Supervisor
11	5	8	Interim Lead Inspector
4	3	6	Interim Lead Risk Assessor

1/1/16	12/1/15	11/1/15	
24	0	1	Limited Term Tattooers
235	234	235	Tattoo Parlors
2	1	1	Limited Term Tattoo Parlors
10	11	11	Tattooing Instructors
4	5	5	Tattooing Schools
159	155	152	Permanent Cosmetic Tattooers
4	4	4	Master Permanent Cosmetic Tattooers
39	39	38	Permanent Cosmetic Tattoo Salons
21	22	22	Permanent Cosmetic Tattoo Instructors
8	9	9	Permanent Cosmetic Tattooing Schools
667	672	677	Waste Mgt Facility Operators
2,459	2,443	2,428	Wastewater Works Operators
2,176	2,165	2,149	Waterworks Operators
89	89	88	Waxing Salons
1,661	1,658	1,664	Wax Technicians
21	21	21	Wax Technician Instructors
12	12	12	Waxing Schools
114	114	113	Wetland Delineators
44	529	519	Wrestlers
1	4	3	Wrestling Events

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TOTAL CURRENT REGULANT POPULATION AS OF JANUARY 1, 2017

303,699

Regulant population numbers are effective for the dates shown only.

1/1/17	12/1/16	11/1/16	
4,083	4,028	3,999	APELSCIDLA Businesses
7,237	7,229	7,210	Architects
1,367	1,368	1,356	Asbestos Workers
1,379	1,379	1,357	Asbestos Supervisors
664	663	661	Asbestos Inspectors
152	150	152	Asbestos Management Planners
169	171	177	Asbestos Project Designers
192	193	195	Asbestos Contractors
305	308	311	Asbestos Project Monitors
90	91	93	Asbestos Laboratories
1,198	1,181	1,181	Auctioneers
249	253	256	Auction Firms
2,991	2,995	2,993	Barbers
314	319	310	Barber Teachers
911	918	921	Barber Shops
73	73	73	Barber Schools
126	123	123	Body Piercers
102	103	101	Body Piercing Salon
398	389	401	Body Piercers Ear Only
68	68	67	Body Piercing Ear Only Salon
22	207	201	Boxers
8	30	29	Boxing/Wrestling Promoters
11	397	397	Box/Wrest Trainers, Seconds, Cutmen
1	5	5	Boxing/Wrestling Managers
3	10	9	Boxing/Wrestling Matchmakers
0	0	0	Boxing Events
32	46	46	Branch Pilots
92	92	93	Cemetery Companies
165	164	165	Cemeteries
1,323	1,315	1,294	Cemetery Sales Personnel
6,015	6,003	5,997	Community Associations
86	86	86	CIC Time Shares
20	20	19	CIC Time Share Exchanges
218	221	224	CIC Condominiums
186	185	186	CIC Managers
311	311	304	CIC Certificate Holders
31,069	31,117	31,155	Contractors-Class A
11,279	11,323	11,352	Contractors-Class B
14,764	14,794	14,827	Contractors-Class C
27,259	27,294	27,306	Contractors-Tradesman
1,325	1,329	1,330	Contractors-Backflow Operators
701	698	700	Contractors-Elevator Mechanics
493	494	494	Contractors-Water Well Systems Providers
7	7	7	Contractors-Accessibility Mechanic
91	91	92	Residential Building Energy Analysts
60	59	59	Residential Building Energy Analyst Firms
42,494	42,465	42,459	Cosmetologists
5,260	5,220	5,185	Cosmetology Salons
2,250	2,250	2,241	Cosmetology Instructors
127	202	202	Cosmetology Schools
28,242	28,008	28,061	Engineers

1/1/17	12/1/16	11/1/16	
10	9	8	Interim Lead Inspector
0	0	2	Interim Lead Risk Assessor
351	349	345	Lead Workers
152	150	156	Lead Supervisors
75	74	73	Lead Inspectors
183	186	192	Lead Risk Assessors
28	27	27	Lead Project Designers
97	98	101	Lead Abatement Contractors
0	114	114	Martial Artists
8,230	8,223	8,206	Nail Technicians
186	186	188	Nail Technician Instructors
682	681	683	Nail Technician Salons
35	35	35	Nail Technician Schools
1,954	1,945	1,942	Opticians
290	293	294	Polygraph Examiners
5,602	5,611	5,624	Real Estate Active Associate Brokers
1,265	1,269	1,272	Real Estate Active Sole Proprietors
4,717	4,716	4,723	Real Estate Active Principal Brokers
38,007	38,030	38,011	Real Estate Active Salespersons
604	593	600	Real Estate Inactive Associate Brokers
93	94	94	Real Estate Inactive Sole Proprietors
352	349	341	Real Estate Inactive Principal Brokers
8,518	8,461	8,491	Real Estate Inactive Salespersons
665	659	657	Real Estate Firms-Branch Offices
4,720	4,714	4,722	Real Estate Firms
2,022	2,010	2,003	Real Estate Firms-Business Entities
1,280	1,283	1,288	Real Estate Firms-Sole Proprietors
580	598	599	Real Estate Course Instructors
182	187	187	Real Estate Proprietary Schools
1,699	1,699	1,701	RE Appraisers-Certified Residential
1,161	1,162	1,157	RE Appraisers-Certified General
434	437	439	RE Appraisers-Residential
95	91	87	Real Estate Appraiser Trainees
32	32	33	RE Inactive Appraiser-Certified Residential
21	21	21	RE Inactive Appraiser-Certified General
30	30	30	RE Inactive Appraiser-Licensed Residential
73	73	72	Real Estate Appraisers Certified Instructors
453	449	447	Real Estate Appraiser Businesses
142	140	139	Real Estate Appraisal Management Companies
50	50	50	Real Estate Appraiser Schools
125	125	125	Soil Scientists
345	344	343	On-Site Soil Evaluators - Alternative
53	55	52	On-Site Soil Evaluators - Conventional
155	154	153	On-Site Sewage Operators - Alternative
86	86	87	On-Site Sewage Operators - Conventional
252	249	250	On-Site Sewage System Installers – Alternative
382	379	381	On-Site Sewage System Installers - Conventional
574	564	569	Tattooers
14	1	0	Limited Term Tattooers
236	234	236	Tattoo Parlors
1	1	1	Limited Term Tattoo Parlors

VIRGINIA DEPARTMENT OF PROFESSIONAL & OCCUPATIONAL REGULATION
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1/1/17	12/1/16	11/1/16	
3,076	3,081	3,054	Estheticians
50	47	52	Esthetics Instructors
48	48	48	Esthetics Schools
1,307	1,289	1,270	Master Estheticians
193	193	191	Master Esthetics Instructors
577	570	572	Esthetics SPAs
2,627	2,644	2,623	Fair Housing Certificate Holders
9	8	8	Fair Housing Instructors
952	944	943	Geologists
727	725	708	Hearing Aid Specialists
421	411	406	Home Inspectors
497	498	501	Interior Designers
1,265	1,296	1,290	Land Surveyors
85	85	85	Land Surveyors B
130	130	129	Land Surveyor Photogrammetrists
902	899	898	Landscape Architects
4	7	8	Interim Lead Supervisor

1/1/17	12/1/16	11/1/16	
11	11	11	Tattooing Instructors
4	4	4	Tattooing Schools
191	187	181	Permanent Cosmetic Tattooers
5	5	6	Master Permanent Cosmetic Tattooers
53	50	47	Permanent Cosmetic Tattoo Salons
22	21	22	Permanent Cosmetic Tattoo Instructors
10	10	10	Permanent Cosmetic Tattooing Schools
658	661	659	Waste Mgt Facility Operators
2,355	2,318	2,298	Wastewater Works Operators
2,280	2,259	2,248	Waterworks Operators
99	98	98	Waxing Salons
1,670	1,659	1,659	Wax Technicians
22	23	24	Wax Technician Instructors
12	13	13	Waxing Schools
109	109	108	Wetland Delineators
52	610	601	Wrestlers
1	11	10	Wrestling Events

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TOTAL CURRENT REGULANT POPULATION AS OF JANUARY 1, 2018

305,239

Regulant population numbers are effective for the dates shown only.

1/1/18	12/1/17	11/1/17	
4,421	4,439	4,412	APELSCIDLA Businesses
7,394	7,388	7,309	Architects
1,360	1,361	1,337	Asbestos Workers
1,365	1,388	1,370	Asbestos Supervisors
681	681	675	Asbestos Inspectors
146	146	143	Asbestos Management Planners
161	162	170	Asbestos Project Designers
195	196	195	Asbestos Contractors
325	324	320	Asbestos Project Monitors
90	90	93	Asbestos Laboratories
1,190	1,190	1,179	Auctioneers
253	256	249	Auction Firms
2,842	2,848	2,848	Barbers
326	323	323	Barber Teachers
828	818	800	Barber Shops
73	73	73	Barber Schools
132	130	127	Body Piercers
98	100	101	Body Piercing Salon
355	350	364	Body Piercers Ear Only
67	67	67	Body Piercing Ear Only Salon
13	91	83	Boxers
7	30	27	Boxing/Wrestling Promoters
73	254	185	Box/Wrest Trainers, Seconds, Cutmen
0	4	4	Boxing/Wrestling Managers
6	24	24	Boxing/Wrestling Matchmakers
0	0	0	Boxing Events
47	47	47	Branch Pilots
93	91	93	Cemetery Companies
165	165	165	Cemeteries
972	994	1,008	Cemetery Sales Personnel
6,198	6,211	6,210	Community Associations
86	86	86	CIC Time Shares
20	20	20	CIC Time Share Exchanges
224	219	218	CIC Condominiums
181	178	174	CIC Managers
288	290	298	CIC Certificate Holders
30,813	30,794	30,814	Contractors-Class A
11,002	11,019	11,041	Contractors-Class B
14,417	14,457	14,465	Contractors-Class C
27,260	27,210	27,150	Contractors-Tradesman
1,338	1,329	1,333	Contractors-Backflow Operators
638	639	631	Contractors-Elevator Mechanics
486	511	510	Contractors-Water Well Systems Providers
5	3	7	Contractors-Accessibility Mechanic
78	81	82	Residential Building Energy Analysts
50	48	54	Residential Building Energy Analyst Firms
42,310	42,321	42,298	Cosmetologists
4,850	4,752	4,780	Cosmetology Salons
2,340	2,334	2,302	Cosmetology Instructors
181	181	180	Cosmetology Schools
28,724	28,486	28,510	Engineers
3,233	3,226	3,226	Estheticians

1/1/18	12/1/17	11/1/17	
1	82	58	Martial Artists
8,331	8,320	8,271	Nail Technicians
208	208	201	Nail Technician Instructors
615	612	601	Nail Technician Salons
33	33	32	Nail Technician Schools
1,900	1,886	1,887	Opticians
294	294	293	Polygraph Examiners
5,644	5,637	5,628	Real Estate Active Associate Brokers
1,222	1,226	1,230	Real Estate Active Sole Proprietors
4,766	4,759	4,753	Real Estate Active Principal Brokers
39,863	39,768	39,696	Real Estate Active Salespersons
560	570	577	Real Estate Inactive Associate Brokers
88	85	83	Real Estate Inactive Sole Proprietors
313	316	320	Real Estate Inactive Principal Brokers
8,288	8,282	8,255	Real Estate Inactive Salespersons
696	689	689	Real Estate Firms-Branch Offices
4,768	4,754	4,754	Real Estate Firms
2,279	2,245	2,240	Real Estate Firms-Business Entities
1,240	1,243	1,242	Real Estate Firms-Sole Proprietors
584	590	586	Real Estate Course Instructors
191	191	192	Real Estate Proprietary Schools
1,620	1,636	1,654	RE Appraisers-Certified Residential
1,145	1,160	1,187	RE Appraisers-Certified General
413	418	432	RE Appraisers-Residential
127	124	122	Real Estate Appraiser Trainees
28	29	29	RE Inactive Appraiser-Certified Residential
20	21	21	RE Inactive Appraiser-Certified General
29	29	30	RE Inactive Appraiser-Licensed Residential
68	68	69	Real Estate Appraisers Certified Instructors
447	452	455	Real Estate Appraiser Businesses
137	140	142	Real Estate Appraisal Management Companies
50	50	50	Real Estate Appraiser Schools
103	104	102	Soil Scientists
1	0	0	On-Site Soil Evaluators – Alternative AOSE
0	0	0	On-Site Soil Evaluators – Conventional COSE
323	331	333	On-Site Soil Evaluators – Master Alter MAOE
51	52	53	On-Site Soil Evaluators – Master Conv MCOE
1	1	1	On-Site Soil Evaluators – Journeyman Alter JAOE
0	0	0	On-Site Soil Evaluators – Journeyman Conv JCOE
0	0	0	On-Site Sewage System Operators – Alter AOSO
0	0	0	On-Site Sewage System Operators – Conv COSO
158	157	156	On-Site Sewage Operators – Master Alter MAOO
102	101	96	On-Site Sewage Operators – Master Conv MCOO
16	13	10	On-Site Sewage Operators –Journeyman Alter JAOO
9	9	9	On-Site Sewage Operators – Journeyman Conv JCOO
2	0	0	On-Site Sewage Operators – Mast Conv/Jour Alter MCJA
0	0	1	On-Site Sewage System Installers – Alternative AOSI
0	0	1	On-Site Sewage System Installers – Conventional COSI
20	0	0	On-Site Sewage System Installers - Journeyman Alter JAOI
8	0	0	On-Site Sewage System Installers - Journeyman Conv JCOI
259	259	257	On-Site Sewage System Installers – Master Alter MAOI
363	363	365	On-Site Sewage System Installers – Mast Conv MCOI

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1/1/18	12/1/17	11/1/17	
59	58	58	Esthetics Instructors
45	44	46	Esthetics Schools
1,376	1,372	1,352	Master Estheticians
203	205	205	Master Esthetics Instructors
557	545	523	Esthetics SPAs
2,554	2,600	2,591	Fair Housing Certificate Holders
9	9	9	Fair Housing Instructors
909	890	884	Geologists
726	703	701	Hearing Aid Specialists
786	777	774	Home Inspectors
494	495	494	Interior Designers
1,265	1,290	1,289	Land Surveyors
75	75	75	Land Surveyors B
123	123	125	Land Surveyor Photogrammetrists
907	912	899	Landscape Architects
1	6	6	Interim Lead Supervisor
18	21	20	Interim Lead Inspector
7	11	11	Interim Lead Risk Assessor
348	348	344	Lead Workers
148	146	149	Lead Supervisors
78	78	76	Lead Inspectors
183	183	191	Lead Risk Assessors
30	30	30	Lead Project Designers
96	96	97	Lead Abatement Contractors

1/1/18	12/1/17	11/1/17	
	16	12	On-Site Sewage System Installers – Journeyman Alter JAOI
	6	3	On-Site Sewage System Installers – Journ Conv JCOI
	2	2	On-Site Sewage Sys Installers – Mas Conv/Journ Alter MCJA
601	599	584	Tattooers
25	8	2	Limited Term Tattooers
248	245	238	Tattoo Parlors
1	2	1	Limited Term Tattoo Parlors
10	11	10	Tattooing Instructors
5	5	4	Tattooing Schools
274	263	243	Permanent Cosmetic Tattooers
6	6	6	Master Permanent Cosmetic Tattooers
88	85	83	Permanent Cosmetic Tattoo Salons
21	20	18	Permanent Cosmetic Tattoo Instructors
12	13	12	Permanent Cosmetic Tattooing Schools
646	640	651	Waste Mgt Facility Operators
2,423	2,413	2,401	Wastewater Works Operators
2,156	2,146	2,131	Waterworks Operators
114	112	106	Waxing Salons
1,599	1,594	1,597	Wax Technicians
23	23	24	Wax Technician Instructors
11	11	11	Waxing Schools
111	109	109	Wetland Delineators
74	698	685	Wrestlers
10	8	14	Wrestling Events

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TOTAL CURRENT REGULANT POPULATION AS OF JANUARY 1, 2019

309,049

Regulant population numbers are effective for the dates shown only.

1/1/19	12/1/18	11/1/18	
4,248	4,223	4,198	APELSCIDLA Businesses
7,432	7,429	7,432	Architects
1,488	1,513	1,516	Asbestos Workers
1,359	1,360	1,366	Asbestos Supervisors
695	705	699	Asbestos Inspectors
142	144	141	Asbestos Management Planners
161	168	161	Asbestos Project Designers
197	199	199	Asbestos Contractors
321	321	325	Asbestos Project Monitors
92	94	93	Asbestos Laboratories
1,146	1,141	1,135	Auctioneers
246	250	245	Auction Firms
2,902	2,915	2,906	Barbers
339	341	334	Barber Teachers
882	883	887	Barber Shops
83	83	83	Barber Schools
129	129	125	Body Piercers
96	97	97	Body Piercing Salon
320	332	320	Body Piercers Ear Only
61	61	60	Body Piercing Ear Only Salon
22	71	70	Boxers
8	30	29	Boxing/Wrestling Promoters
30	242	231	Box/Wrest Trainers, Seconds, Cutmen
0	4	4	Boxing/Wrestling Managers
7	27	27	Boxing/Wrestling Matchmakers
0	2	0	Boxing Events
44	44	44	Branch Pilots
89	88	88	Cemetery Companies
160	160	160	Cemeteries
921	942	943	Cemetery Sales Personnel
6,392	6,391	6,389	Community Associations
88	88	88	CIC Time Shares
22	21	21	CIC Time Share Exchanges
222	221	227	CIC Condominiums
177	174	174	CIC Managers
309	315	302	CIC Certificate Holders
31,171	31,175	31,144	Contractors-Class A
10,782	10,815	10,860	Contractors-Class B
14,158	14,190	14,225	Contractors-Class C
27,616	27,645	27,707	Contractors-Tradesman
1,408	1,403	1,400	Contractors-Backflow Operators
677	681	671	Contractors-Elevator Mechanics
487	486	484	Contractors-Water Well Systems Providers
10	10	10	Contractors-Accessibility Mechanic
77	77	77	Residential Building Energy Analysts
55	55	54	Residential Building Energy Analyst Firms
42,041	42,129	42,175	Cosmetologists
5,072	5,158	5,080	Cosmetology Salons
2,408	2,406	2,408	Cosmetology Instructors
158	194	194	Cosmetology Schools
29,157	28,941	28,957	Engineers
3,342	3,324	3,286	Estheticians
59	63	59	Esthetics Instructors
42	42	42	Esthetics Schools
1,436	1,430	1,421	Master Estheticians
217	216	210	Master Esthetics Instructors
637	634	631	Esthetics SPAs
2,288	2,311	2,328	Fair Housing Certificate Holders
8	7	9	Fair Housing Instructors

1/1/19	12/1/18	11/1/18	
3	59	51	Martial Artists
8,431	8,399	8,404	Nail Technicians
223	223	221	Nail Technician Instructors
659	663	663	Nail Technician Salons
38	38	37	Nail Technician Schools
1,926	1,910	1,913	Opticians
299	300	305	Polygraph Examiners
5,714	5,732	5,711	Real Estate Active Associate Brokers
1,183	1,193	1,197	Real Estate Active Sole Proprietors
4,820	4,826	4,811	Real Estate Active Principal Brokers
41,278	41,340	41,253	Real Estate Active Salespersons
522	518	523	Real Estate Inactive Associate Brokers
84	85	86	Real Estate Inactive Sole Proprietors
314	314	324	Real Estate Inactive Principal Brokers
8,498	8,423	8,408	Real Estate Inactive Salespersons
711	715	709	Real Estate Firms-Branch Offices
4,827	4,827	4,813	Real Estate Firms
2,726	2,690	2,627	Real Estate Firms-Business Entities
1,195	1,200	1,200	Real Estate Firms-Sole Proprietors
609	616	608	Real Estate Course Instructors
214	214	210	Real Estate Proprietary Schools
1,628	1,642	1,631	RE Appraisers-Certified Residential
1,145	1,157	1,144	RE Appraisers-Certified General
412	418	414	RE Appraisers-Residential
136	135	138	Real Estate Appraiser Trainees
30	30	31	RE Inactive Appraiser-Certified Residential
20	21	21	RE Inactive Appraiser-Certified General
28	29	29	RE Inactive Appraiser-Licensed Residential
65	67	66	Real Estate Appraisers Certified Instructors
433	436	434	Real Estate Appraiser Businesses
137	138	141	Real Estate Appraisal Management Companies
50	50	50	Real Estate Appraiser Schools
98	98	98	Soil Scientists
0	0	0	On-Site Soil Evaluators – Alternative AOSE
0	0	0	On-Site Soil Evaluators – Conventional COSE
337	338	338	On-Site Soil Evaluators – Master Alter MAOE
49	49	49	On-Site Soil Evaluators – Master Conv MCOE
4	4	4	On-Site Soil Evaluators – Journeyman Alter JAOE
4	4	4	On-Site Soil Evaluators – Journeyman Conv JCOE
0	0	0	On-Site Sewage System Operators – Alter AOSO
0	0	0	On-Site Sewage System Operators – Conv COSO
166	167	165	On-Site Sewage Operators – Master Alter MAOO
124	120	118	On-Site Sewage Operators – Master Conv MCOO
43	34	33	On-Site Sewage Operators –Journeyman Alter JAOO
12	14	14	On-Site Sewage Operators – Journeyman Conv JCOO
0	0	0	On-Site Sewage Operators – Mast Conv/Jour Alter MCJA
0	0	0	On-Site Sewage System Installers – Alternative AOSI
0	0	0	On-Site Sewage System Installers – Conventional COSI
265	268	267	On-Site Sewage System Installers – Master Alter MAOI
344	344	347	On-Site Sewage System Installers – Mast Conv MCOI
41	35	33	On-Site Sewage System Installers – Journeyman Alter JAOI
14	15	15	On-Site Sewage System Installers – Jour Conv JCOI
3	3	3	On-Site Sewage Sys Installers – Mas Conv/Jour Alter MCJA
655	667	666	Tattooers
36	10	5	Limited Term Tattooers
251	249	245	Tattoo Parlors
1	1	1	Limited Term Tattoo Parlors
8	9	9	Tattooing Instructors
5	5	5	Tattooing Schools

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1/1/19	12/1/18	11/1/18	
977	961	960	Geologists
785	783	773	Hearing Aid Specialists
916	921	906	Home Inspectors
498	504	500	Interior Designers
1,254	1,298	1,292	Land Surveyors
75	75	75	Land Surveyors B
118	118	118	Land Surveyor Photogrammetrists
924	921	919	Landscape Architects
5	4	5	Interim Lead Supervisor
10	10	14	Interim Lead Inspector
3	8	7	Interim Lead Risk Assessor
307	318	332	Lead Workers
143	144	145	Lead Supervisors
85	85	85	Lead Inspectors
188	195	189	Lead Risk Assessors
27	27	27	Lead Project Designers
95	98	97	Lead Abatement Contractors

1/1/19	12/1/18	11/1/18	
406	401	384	Permanent Cosmetic Tattooers
10	9	8	Master Permanent Cosmetic Tattooers
131	130	125	Permanent Cosmetic Tattoo Salons
27	28	27	Permanent Cosmetic Tattoo Instructors
15	15	15	Permanent Cosmetic Tattooing Schools
666	668	672	Waste Management Facility Operators
2,211	2,203	2,200	Wastewater Works Operators
2,262	2,256	2,253	Waterworks Operators
121	119	117	Waxing Salons
1,599	1,603	1,602	Wax Technicians
23	23	23	Wax Technician Instructors
14	14	15	Waxing Schools
113	112	112	Wetland Delineators
84	631	626	Wrestlers
3	5	12	Wrestling Events

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TOTAL CURRENT REGULANT POPULATION AS OF JANUARY 1, 2020

313, 733

Regulant population numbers are effective for the dates shown only.

1/1/20	12/1/19	11/1/19	
4,665	4,661	4,646	APELSCIDLA Businesses
7,528	7,513	7,517	Architects
1,431	1,449	1,478	Asbestos Workers
1,365	1,368	1,380	Asbestos Supervisors
718	713	704	Asbestos Inspectors
148	146	139	Asbestos Management Planners
167	166	167	Asbestos Project Designers
190	193	193	Asbestos Contractors
333	328	323	Asbestos Project Monitors
92	92	92	Asbestos Laboratories
2	0	0	Asbestos Laboratory Branch Offices
1,151	1,153	1,152	Auctioneers
241	241	240	Auction Firms
0	4	4	Temporary Barbers
3,193	3,171	3,162	Barbers
0	0	0	Temporary Master Barbers
1	1	1	Temporary Barber Teachers
870	876	877	Barber Shops
69	69	69	Barber Schools
129	130	132	Body Piercers
90	90	94	Body Piercing Salon
39	37	40	Apprentice Body Piercers
369	378	368	Body Piercers Ear Only
65	65	64	Body Piercing Ear Only Salon
0	0	0	Temporary Boxers
23	109	106	Boxers
7	29	29	Boxing/Wrestling Promoters
49	190	185	Box/Wrest Trainers, Seconds, Cutmen
0	8	8	Boxing/Wrestling Managers
7	28	28	Boxing/Wrestling Matchmakers
0	0	0	Boxing Events
44	44	44	Branch Pilots
87	88	89	Cemetery Companies
160	160	160	Cemeteries
941	906	911	Cemetery Sales Personnel
6,737	6,716	6,701	Community Associations
76	77	77	CIC Time Shares
22	22	22	CIC Time Share Exchanges
215	211	217	CIC Condominiums
5	5	5	CIC Alternative Purchase
0	0	0	CIC Time-Share Resellers
182	180	178	CIC Managers
321	322	320	CIC Certificate Holders
0	0	0	Natural Gas Automobile Mechanic
2	7	9	Temporary Contractors
31,478	31,448	31,433	Contractors-Class A
10,547	10,569	10,595	Contractors-Class B
13,927	13,949	13,996	Contractors-Class C
27,938	27,838	27,777	Contractors-Tradesman
1,433	1,421	1,419	Contractors-Backflow Operators
713	720	713	Contractors-Elevator Mechanics
469	492	493	Contractors-Water Well Systems Providers
14	14	15	Contractors-Accessibility Mechanic
0	0	0	Emergency Elevator Mechanics
68	69	65	Residential Building Energy Analysts
51	51	52	Residential Building Energy Analyst Firms
11	24	24	Temporary Cosmetologists

1/1/20	12/1/19	11/1/19	
316	319	323	Lead Workers
142	140	139	Lead Supervisors
84	83	84	Lead Inspectors
195	198	200	Lead Risk Assessors
27	27	27	Lead Project Designers
95	96	95	Lead Abatement Contractors
12	25	25	Martial Artists
8,842	8,747	8,747	Nail Technicians
238	236	235	Nail Technician Instructors
662	670	671	Nail Technician Salons
37	36	37	Nail Technician Schools
6	12	10	Temporary Nail Technicians
0	0	1	Temporary Nail Technician Instructors
1,859	1,854	1,841	Opticians
296	295	295	Polygraph Examiners
20	19	20	Polygraph Examiner Interns
5,708	5,709	5,706	Real Estate Active Associate Brokers
1,151	1,152	1,156	Real Estate Active Sole Proprietors
4,897	4,885	4,868	Real Estate Active Principal Brokers
42,250	42,321	42,308	Real Estate Active Salespersons
537	529	527	Real Estate Inactive Associate Brokers
78	78	78	Real Estate Inactive Sole Proprietors
309	312	329	Real Estate Inactive Principal Brokers
8,426	8,368	8,375	Real Estate Inactive Salespersons
721	721	714	Real Estate Firms-Branch Offices
4,900	4,889	4,868	Real Estate Firms
3,279	3,268	3,252	Real Estate Firms-Business Entities
1,157	1,158	1,159	Real Estate Firms-Sole Proprietors
570	577	579	Real Estate Course Instructors
1	1	1	Real Estate Settlement Agents
215	217	213	Real Estate Proprietary Schools
1,612	1,620	1,625	RE Appraisers-Certified Residential
1,153	1,156	1,163	RE Appraisers-Certified General
395	398	402	RE Appraisers-Residential
137	138	142	Real Estate Appraiser Trainees
260	246	250	Temporary Real Estate Appraisers
33	33	31	RE Inactive Appraiser-Certified Residential
24	23	23	RE Inactive Appraiser-Certified General
27	27	27	RE Inactive Appraiser-Licensed Residential
65	66	66	Real Estate Appraisers Certified Instructors
429	430	433	Real Estate Appraiser Businesses
127	130	132	Real Estate Appraisal Management Companies
50	50	50	Real Estate Appraiser Schools
92	92	91	Professional Soil Scientists
331	339	339	Onsite Soil Evaluators – Master Alter MAOE
49	49	48	Onsite Soil Evaluators – Master Conv MCOE
5	5	4	Onsite Soil Evaluators – Journeyman Alter JAOE
10	10	8	Onsite Soil Evaluators – Journeyman Conv JCOE
174	174	170	Onsite Sewage Operators – Master Alter MAOO
122	122	123	Onsite Sewage Operators – Master Conv MCOO
57	56	59	Onsite Sewage Operators –Journeyman Alter JAOO
13	13	12	Onsite Sewage Operators – Journeyman Conv JCOO
279	279	278	Onsite Sewage System Installers – Master Alter MAOI
339	341	344	Onsite Sewage System Installers – Mast Conv MCOI
49	50	51	Onsite Sewage System Installers – Journeyman Alter JAOI
27	25	24	Onsite Sewage System Installers – Jour Conv JCOI
3	3	3	Onsite Sewage Sys Installers – Mas Conv/Jour Alter MCJA

VIRGINIA DEPARTMENT OF PROFESSIONAL & OCCUPATIONAL REGULATION
PERIMETER CENTER, SUITE 400
9960 MAYLAND DRIVE
RICHMOND, VIRGINIA 23233

E-Mail: dpor@dpor.virginia.gov
Web: http://www.dpor.virginia.gov

Phone: 804-367-8500
Facsimile: 804-367-2475
Complaints: 804-367-8504

1/1/20	12/1/19	11/1/19	
42,243	42,229	42,253	Cosmetologists
4,928	4,954	5,026	Cosmetology Salons
13	12	10	Temporary Cosmetology Instructors
2,425	2,417	2,416	Cosmetology Instructors
172	173	173	Cosmetology Schools
29,617	29,398	29,397	Professional Engineers
3,606	3,570	3,560	Estheticians
3	4	3	Temporary Esthetician
65	63	62	Esthetics Instructors
45	44	45	Esthetics Schools
1,606	1,585	1,577	Master Estheticians
1	2	1	Temporary Master Esthetician
233	231	228	Master Esthetician Instructors
669	670	671	Esthetics SPAs
2,084	2,120	2,180	Fair Housing Certificate Holders
8	8	8	Fair Housing Instructors
946	929	923	Geologists
776	774	771	Hearing Aid Specialists
34	34	35	Temporary Hearing Aid Specialist Permit Holders
990	977	984	Home Inspectors
500	497	493	Interior Designers
1,289	1,290	1,291	Land Surveyors
71	71	71	Land Surveyors B
115	115	115	Land Surveyor Photogrammetrists
943	940	942	Landscape Architects
8	6	7	Interim Lead Supervisor
10	12	8	Interim Lead Inspector
0	1	1	Interim Lead Risk Assessor

1/1/20	12/1/19	11/1/19	
705	702	703	Tattooers
29	5	2	Limited Term Tattooers
156	155	165	Apprentice Tattooer
262	261	258	Tattoo Parlors
1	1	1	Limited Term Tattoo Parlors
10	10	10	Tattooing Instructors
5	4	4	Tattooing Schools
503	487	486	Permanent Cosmetic Tattooers
12	11	11	Master Permanent Cosmetic Tattooers
172	173	172	Permanent Cosmetic Tattoo Salons
29	27	25	Permanent Cosmetic Tattoo Instructors
16	15	15	Permanent Cosmetic Tattooing Schools
661	664	667	Waste Management Facility Operators
2,314	2,303	2,292	Wastewater Works Operators
2,157	2,147	2,144	Waterworks Operators
112	116	113	Waxing Salons
1,567	1,563	1,561	Wax Technicians
2	1	0	Temporary Wax Technicians
0	0	0	Temporary Wax Technician Instructors
22	22	22	Wax Technician Instructors
16	16	16	Waxing Schools
116	117	117	Wetland Delineators
0	0	0	Temporary Wrestlers
189	666	664	Wrestlers
2	6	13	Wrestling Events

Appendix E

Project Examples Demonstrating the Role of Landscape Architects in Protecting Public Health, Safety, and Welfare

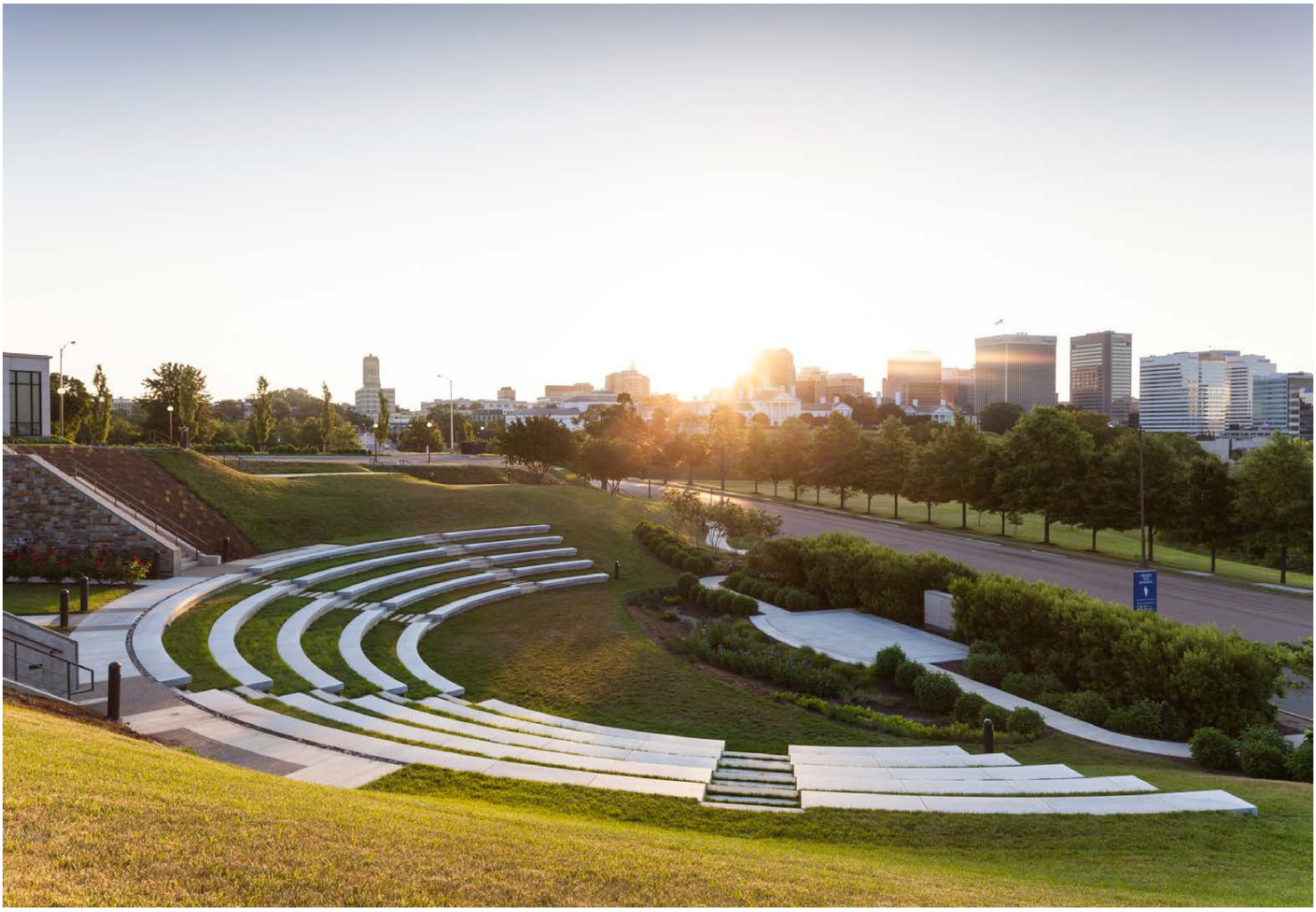
Alethia Tanner Park *Washington, DC*

NBW was selected by the NoMa Parks Foundation to design a two-acre park in the NoMa neighborhood of Washington DC. The site for Alethia Tanner Park is located next to the historic Eckington neighborhood, along the Metropolitan Branch Trail (MBT), and between two Metro Red Line stops - well-positioned to act as a powerful link between two thriving neighborhoods. Historically, the site was a rail yard for freight and passenger trains traveling between Washington DC, Baltimore, and beyond. The design team is working towards the creation of a park that reflects the bustling energy of the site's previous eras while providing much needed recreational space and access to nature for current and future neighbors. Remediation of the site is necessary due to its former industrial use. The client and design team are exploring this opportunity to educate visitors to various strategies for cleaning the soil, including phytoremediation - using plants in situ - for the removal, degradation, or containment of contaminants in soils. Responding to robust community input, NBW's plan envisions a neighborhood backyard – a place for people to come together: to re-energize, relax, learn, and play. Key park features will include a large lawn to accommodate a summer movie series, shaded woodland planting offering a place of cool respite, a playground, picnic area, café, and a dog park. The park will help to shape the new neighborhood's identity, serving the needs of the community and building on the history of the site and city to offer a dynamic community space for residents to call their own.

Virginia War Memorial *Richmond, Virginia*

NBW designed the landscape for this 4.3-acre site in conjunction with the new 18,000 sf Paul and Phyllis Galanti Education Center designed by Glave & Holmes Associates. Taking advantage of sweeping views of the James River and the Historic District of downtown Richmond, NBW designed an amphitheater that nestles into the hillside below the Memorial and seats 250 people. A rain garden surrounds the stage platform and captures runoff and rainfall at the low point of the site. The plant palette is predominantly comprised of native groundcovers, shrubs, trees, and grasses.

The Virginia War Memorial was built in 1958 to commemorate and honor Virginians who have lost their lives in all wars while serving the United States. This project expands the Memorial to better accommodate public events and visitors, increase educational resources, and create places for memorializing future casualties of war.



The Dell at the University of Virginia *Charlottesville, Virginia*

One of several major projects that NBW has completed for the University of Virginia, the 11-acre Dell is a hybrid landscape that resurrects a buried stream, transforming derelict and unused land into a state-of-the-art stormwater pond and forebay system. The park reintroduces vanishing wildlife habitat, provides multiple recreation opportunities while mediating between campus and an adjacent neighborhood, serves as a memorable entrance for visitors arriving at the University, and functions as a demonstration landscape and Virginia-native ecobotanic garden for students and faculty.

The daylighted stream cascades into a precisely calibrated stormwater pond one whose geometries reflect both the order of the University grid and the meander of the piedmont stream hydrology. The indigenous planting plan illustrates the spectrum of plant zones found in Virginia: native plants of the Coastal Plain are represented in the area around the stormwater basin; the Piedmont is represented in the intermediate stream zone; and the upland Blue Ridge is represented in the upper reaches of the restored stream.

The project was a collaboration between NBW (lead designer), Biohabitats, Patton Harris Rust & Associates, and Nitsch Engineering.


FAUQUIER ROAD
THOMPSON ROAD
AMMET STREET

Martha Jefferson Hospital New Campus *Charlottesville, Virginia*

NBW was commissioned to design the landscape for the new 80-acre Martha Jefferson Hospital campus nestled into a hilltop just east of the City of Charlottesville. The new campus for this community hospital embodies and celebrates the latest in progressive landscape design focusing on the creation of healthy landscapes. Fundamental to this is the siting of the building complex, sensitively knit into a south and west-facing hillside which helps moderate the significant building footprint to a more human-scaled size while simultaneously orienting the majority of its patient rooms to unparalleled views of the majestic Southwest and Blue Ridge Mountains.

The landscape plan augments the sensitive siting of the building by emphasizing an interplay of inside and outside and creating a series of garden spaces that reinforce the understanding of nature as a potentially powerful healing force in our lives. At Martha Jefferson this goal is extended to include all participants in the life of a community hospital - patients and their families, nurses, doctors, staff, and visitors.

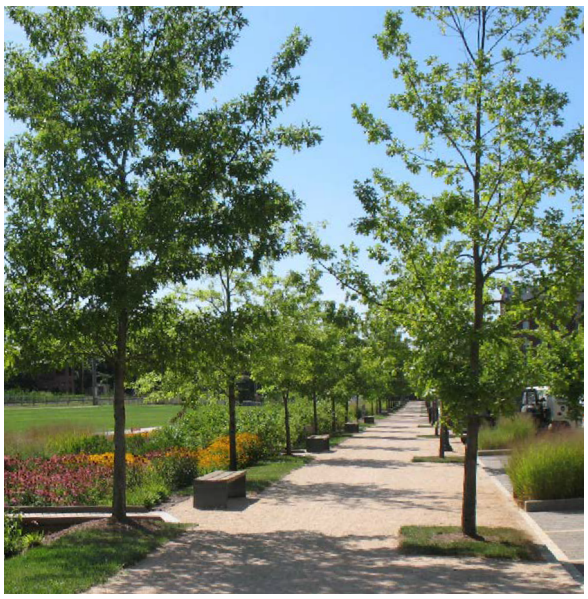
The landscape features a network of jogging and stroll paths through the campus, a native plant palette, medicinal plant gardens, an amphitheater, a labyrinth, roof gardens, minimal areas of mown lawn, and expansive meadows dominated by native wildflowers.

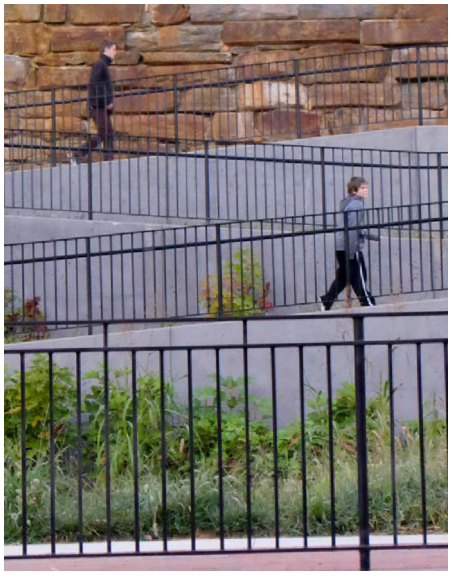

The Murray Morris Meadow
The Murray Morris Meadow beside the lake below and the paths leading to the meadow are planted with native species of grasses and herbaceous plants. Native trees are also included in this landscape.
Native ecosystems developed with native plants depending on insects and birds to pollinate them, the birds depending on the insects and seeds for food and other wildlife depending on the health of the system. This meadow replicates some of the naturally occurring interrelationships by planting native grasses: Switchgrass (Panicum virgatum), Little Bluestem, Virginia Wild Rye, Sideoats Gramma and Purple Lovegrass. Native perennials include Butterfly weed, Asclepias, Asters, Coreopsis, Coneflowers, Goldenrod, Beardtongue and Blackeyed Susans. Many species of butterflies come to these flowers; the Monarch butterfly needs the Butterfly weed or one of its relatives to complete its life cycle.
These plants also slow rainwater runoff and increase absorption into the soil. Not only does this prevent erosion but helps with the current depletion of our underground water table.
The creation of this self-sustaining ecosystem reflects Martha Jefferson Hospital's belief that a balanced environment is vital to the general health and well being of us all.
from the Albemarle Garden Club
Asclepias
Aster
Echinacea
Little Bluestem
Panicum

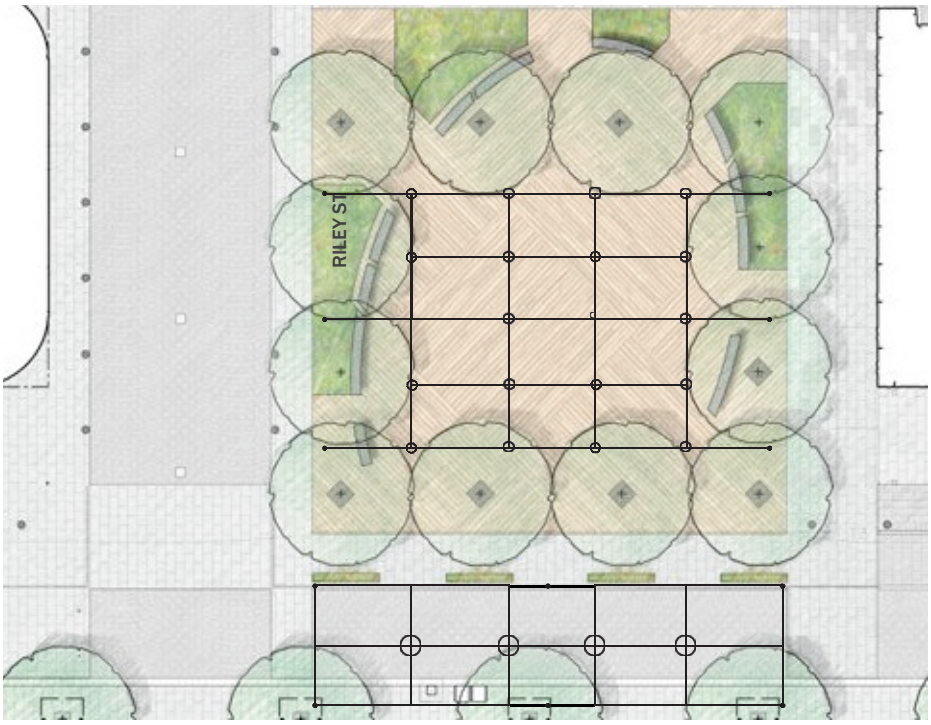
Lynchburg Riverfront Revitalization Plan *Lynchburg, Virginia*

NBW was selected by the City of Lynchburg to develop an Implementation Plan for the revitalization of the Downtown Riverfront in 2006. NBW assessed the existing conditions in relation to the proposed master plan for the entire downtown area (by Sasaki Associates in 2002). This four-month effort culminated in a plan that identifies and prioritizes a series of achievable projects between Commerce Street and the riverfront. Included in the plan are an 8-acre Riverfront Park and the renewal of nearby urban streets with multiple spaces for recreation, interpretive facilities, and gathering. It includes a re-imagined mixed-use pedestrian corridor, restored streets, and public ways with dedicated outdoor café spaces, play areas, a large canal basin, fountains, and an events plaza. The design process involved several meetings with city and private stakeholders and was endorsed by City Council in 2006.

Specific projects were identified within the Implementation plan and a phasing plan was developed. The first Riverfront Park project, Jefferson Street North, was opened to the public in June 2010. NBW is working on the construction documents for a second phase of the project, Jefferson Street South, that will complete the streetscape adjacent to Riverfront Park. The Lower Bluff Walk Corridor is also in the construction document phase. This pedestrian arts and dining corridor will connect Main Street and the Riverfront.







DISTRICT WHARF PHASE II

WASHINGTON, D.C.

Status: Ongoing, 2022 completion

Landscape Architect: Wolf | Josey

Role: Open Space Landscape Architect (Paul Josey) through Construction Administration Phase II

Client: PN Hoffman and Madison Marquette

Phases: The Cove, The Terrace, Parker Row, Maine Avenue (Phase II)

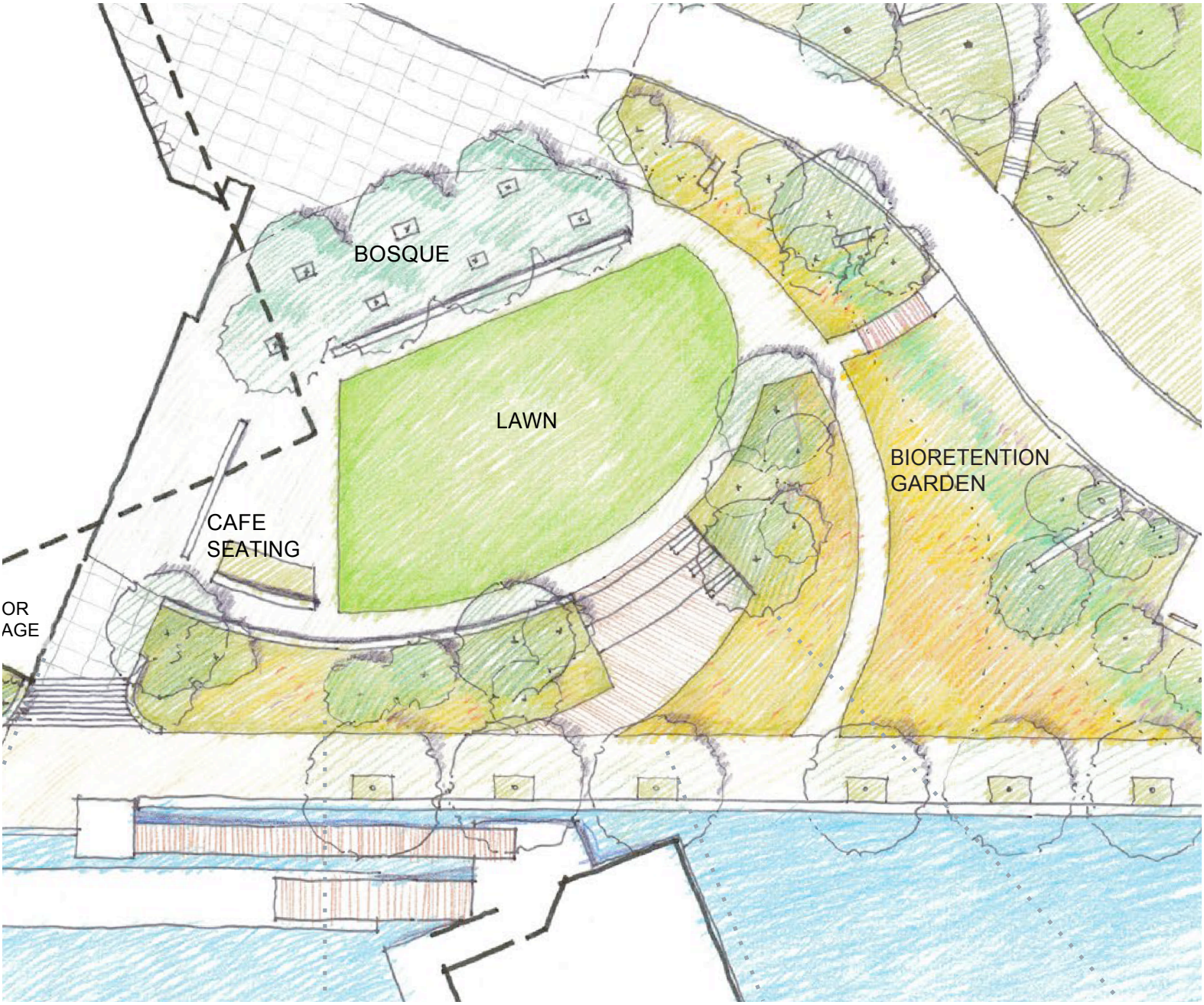
Size: 27 acres

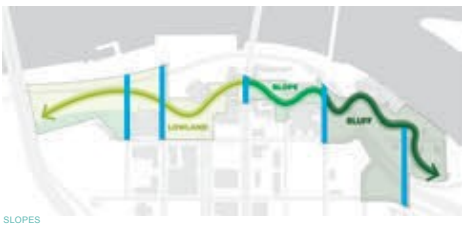
The Wharf DC is a mixed-use waterfront development stretching across 27 acres of land including 13 high rise buildings over structured parking.

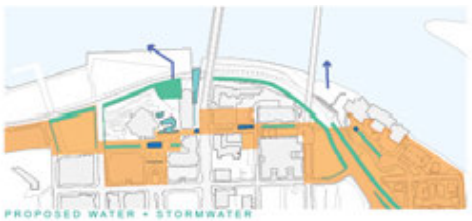
Located on the historic Washington Canal along D.C.'s southwest waterfront, the Wharf (Phase I) was opened to the public in the fall of 2017, and has already become a destination for District residents and visitors alike. After managing the design of the Phase I Open Space and 3 acre Waterfront Park while at Nelson Byrd Woltz, Wolf Josey continues to lead the landscape design of the Phase II Open Space.

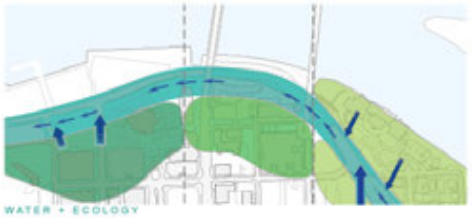
This includes several plazas and streetscape along a central waterfront promenade lined with riparian shade trees and restaurants. Retail streets and connective mews between buildings, designed with the pedestrian experience in mind, use contiguous paving to make space more easily shared by cars and people and to reconnect visitors and residents to the Potomac River waterfront. The project also includes a large event lawn, viewing amphitheater and low-impact green infrastructure.


The Terrace


BOSQUE
LAWN
BIORETENTION
GARDEN
CAFE
SEATING
OR
AGE







“The Ramble” ARTS PROMENADE

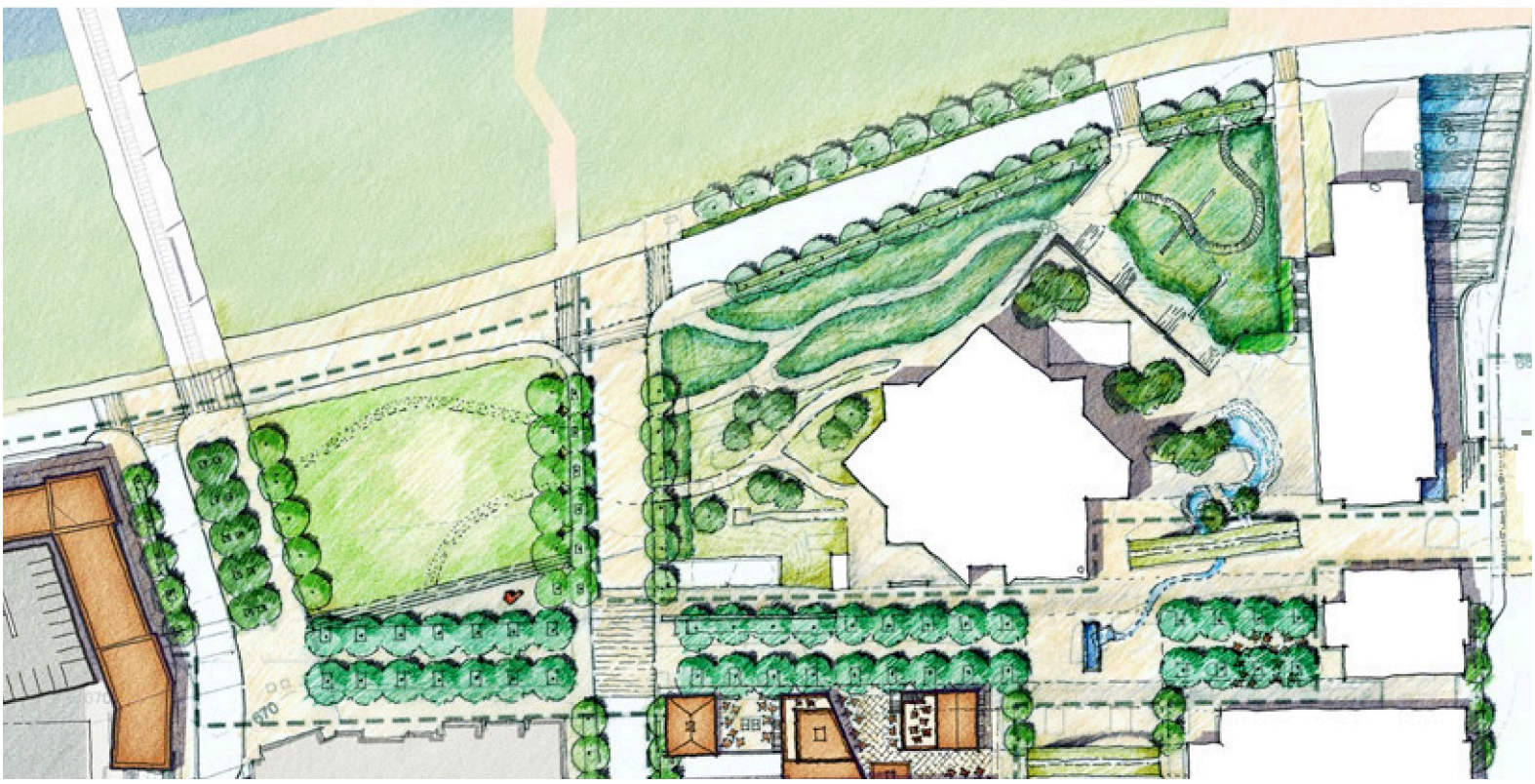
CHATTANOOGA, TN

The district master plan aims to highlight the city’s thriving fine arts movement and rich history while linking the pedestrian corridor to the greater regional trail systems including the Tennessee Riverwalk.

Running through downtown Chattanooga along the Tennessee River, this master plan arts promenade envisions a new destination and pedestrian center for the city. Over eight city blocks, the promenade connects a series of well loved landmarks including the Hunter Arts Museum, Walnut Street Bridge, Tennessee Aquarium and Ross’s Landing Park.

The promenade is defined by three distinct zones informing its stormwater needs: The Lowland/Hydric zone including the Tennessee Aquarium, the Slope/Mesic zone, and the Bluff/Xeric zone including the Hunter Arts Museum. These biomes define the planting and stormwater interventions necessary for each zone. Stormwater interventions along Riverfront Parkway and along the First Street slope provide much needed connections for water from the urban center to the river. A series of raingardens adjacent to the parkway provide a visual buffer for bike and pedestrian paths as well as bio-retention.

Status: District Master Plan
Landscape Architect: Wolf | Josey in collaboration with UDA, WMWA
Role: Planting, Soils and Stormwater Master Planning
Client: River City Company
Size: 22 acres



UVA LAWN TREE FRAMEWORK PLAN

CHARLOTTESVILLE, VA

Status: Completed
Landscape Architect: Wolf | Josey
Role: Landscape Architect
Client: University of Virginia
Size: 5 acres

For generations of students, the Lawn at the University of Virginia is not only the symbolic center of campus but a place for learning, discourse, celebration and ceremony. Integral to the physical enjoyment of the Lawn as a public space are the canopy trees.

Originally planted in 1827, shortly after the buildings were constructed, the tree plantings have evolved from a single species allee to a mixed species, loosely organized double allee. The trees have had to adapt to increases in student populations and pedestrian traffic, expanding University lawn events, and scores of environmental pressures.

The University commissioned an update to their existing 100 Year Tree Plan in response to the arrival of the emerald ash borer, which poses a significant threat to the current Lawn canopy. The resulting 100 Year Lawn Tree Plan explores the history of tree plantings on the Lawn, provides a current inventory and health assessment of each tree, and recommends future, highly resilient tree species that meet the University's aesthetic and maintenance requirements. The Plan concludes with a 1 - 50 year implementation strategy that considers the impact of ash removal on the overall canopy and the changing character of the Lawn as new tree species are planted to among the existing trees and adjacent architecture.

WOLF JOSEY

Acer rubrum (4)
Red Maple

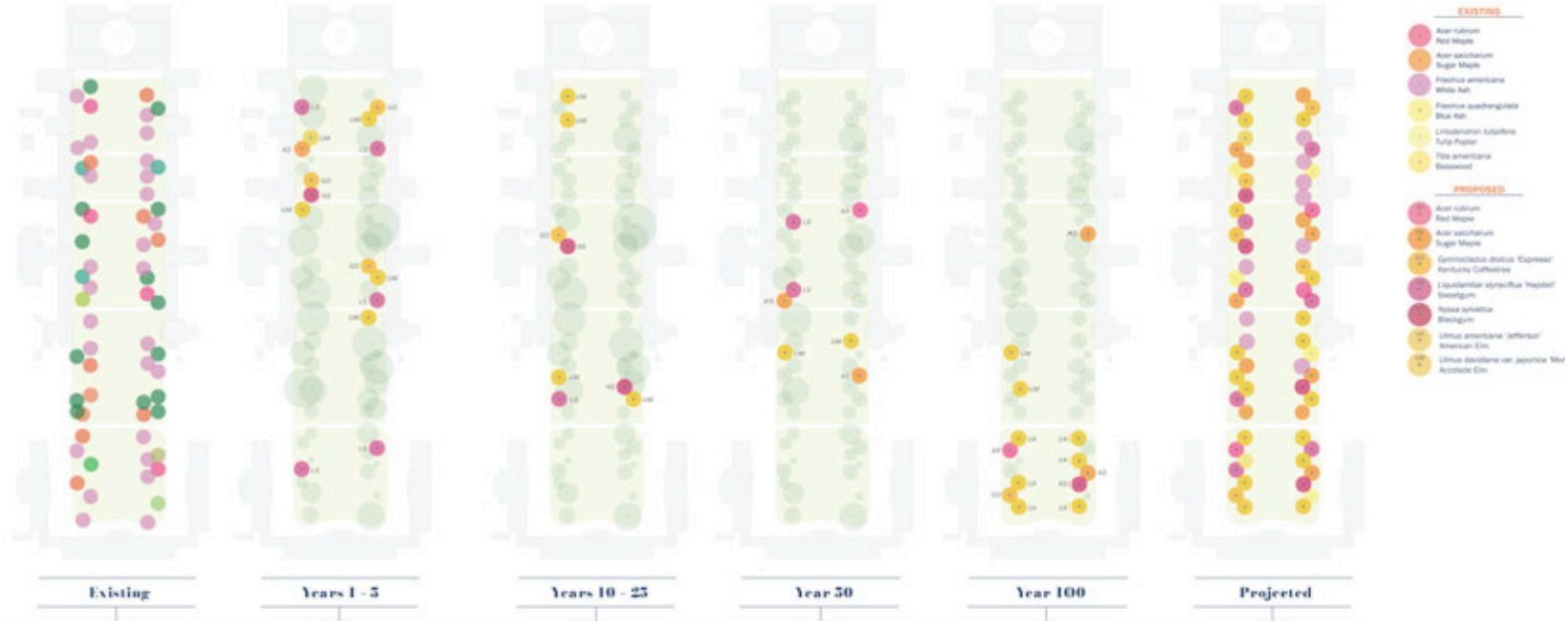
Acer saccharum (10)
Sugar Maple

Fraxinus spp. (44)
Ash species

Liriodendron tulipifera (1)
Tulip poplar

Tilia americana (1)
Basswood

Ulmus americana (1)
Princeton Elm



CHATHAM MASTER PLAN

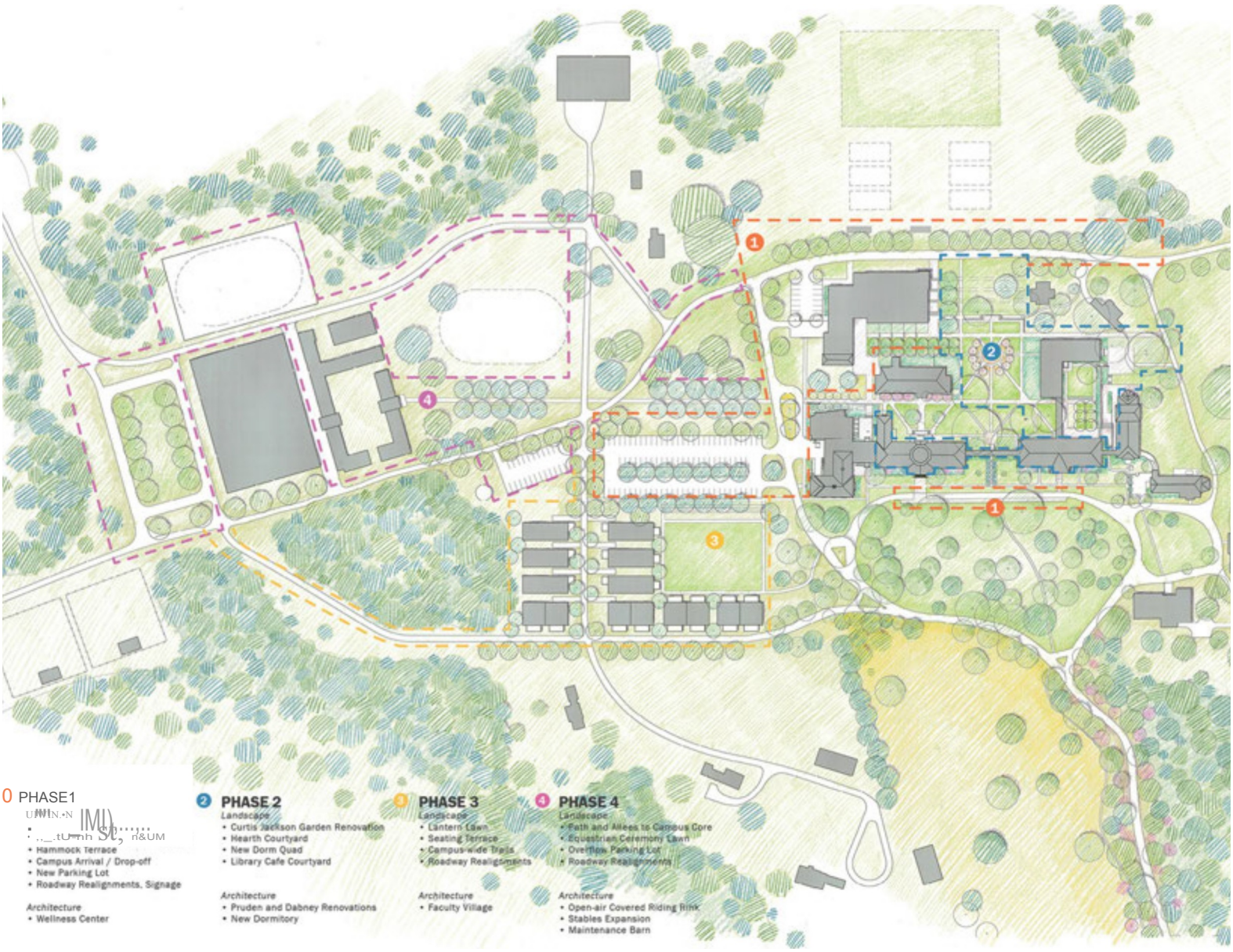
CHATHAM, VA

Status: Completed
Landscape Architect: Wolf | Josey
Role: Landscape Architect
Client: Chatham Hall
Size: 365 acres
Awards: 2019 VA ASLA Analysis and Planning Merit Award

The impetus for the Chatham Hall Master Plan was to improve health and wellness for the students and faculty through a higher quality residential experience with modernized housing, stronger community areas, and more desirable outdoor environments within the overall campus.

The master plan analyzed future building needs in the core campus and provides a larger scale assessment of the overall 365-acre property, evaluating the forest, fields, arrival, circulation, as well as the school's distinguished equestrian center. The design team established a baseline of existing conditions - evaluating size, aesthetics, function, and present and future maintenance costs.

The final master plan merged the new building program with the larger landscape and proposed a series of landscape improvements within the core campus including several outdoor courtyards, creation of an open central quad, as well as reconfigured arrival and parking.



0 PHASE1

2 PHASE 2

Landscape
- Curtis Jackson Garden Renovation
- Hearth Courtyard
- New Dorm Quad
- Library Cafe Courtyard

Architecture
- Pruden and Dabney Renovations
- New Dormitory

3 PHASE 3

Landscape
- Lantern Lawn
- Seating Terrace
- Campus-wide Trails
- Roadway Realignments

Architecture
- Faculty Village

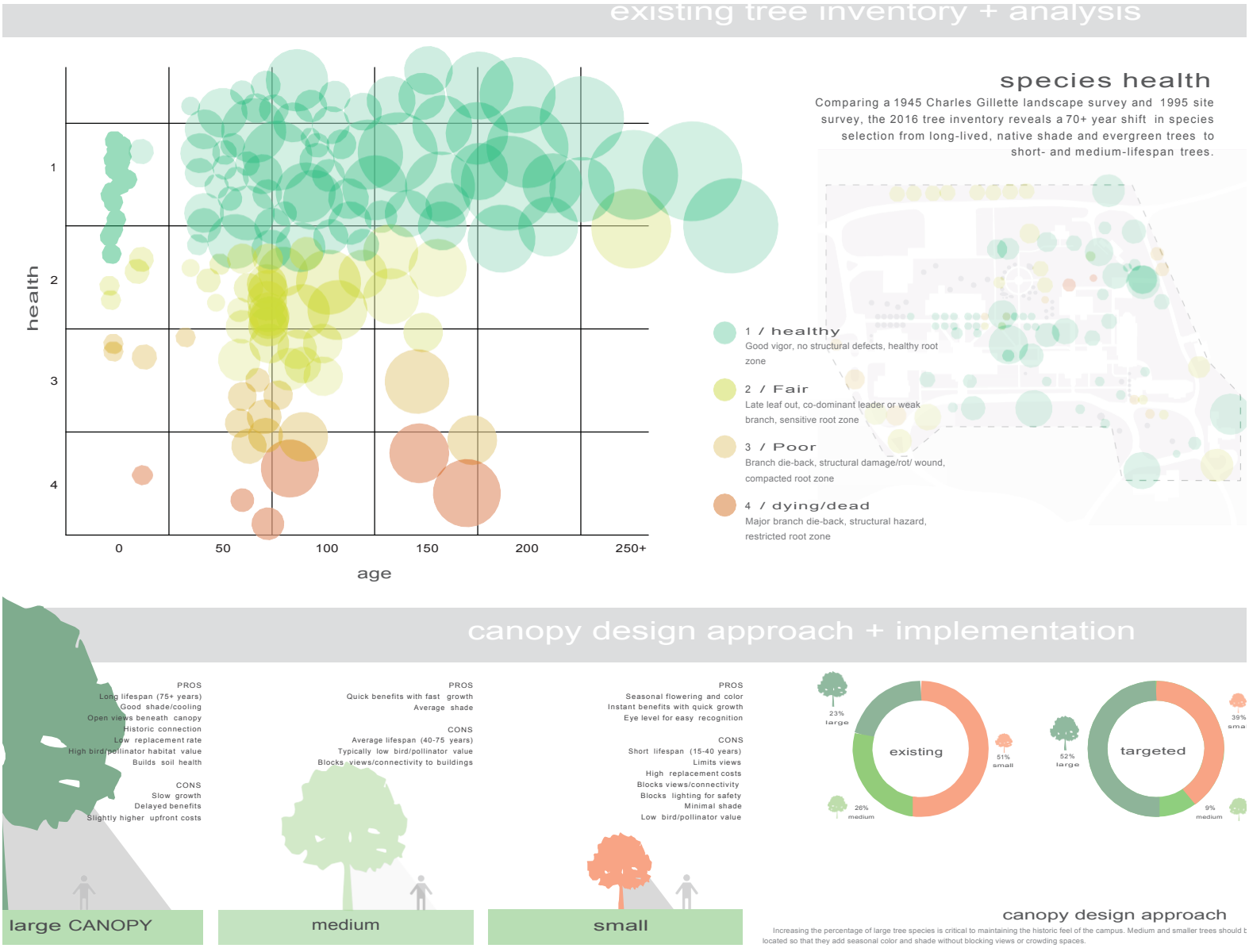
4 PHASE 4

Landscape
- Path and Allees to Campus Core
- Equestrian Ceremony Lawn
- Overflow Parking Lot
- Roadway Realignments

Architecture
- Open-air Covered Riding Rink
- Stables Expansion
- Maintenance Barn

- Hammock Terrace
- Campus Arrival / Drop-off
- New Parking Lot
- Roadway Realignments, Signage

Architecture
- Wellness Center



CHATHAM TREE FRAMEWORK PLAN

CHATHAM, VA

Status: Completed

Landscape Architect: Wolf | Josey

Role: Landscape Architect

Client: Chatham Hall

Size: 12 acres

Awards: 2017 Virginia ASLA Honor Award

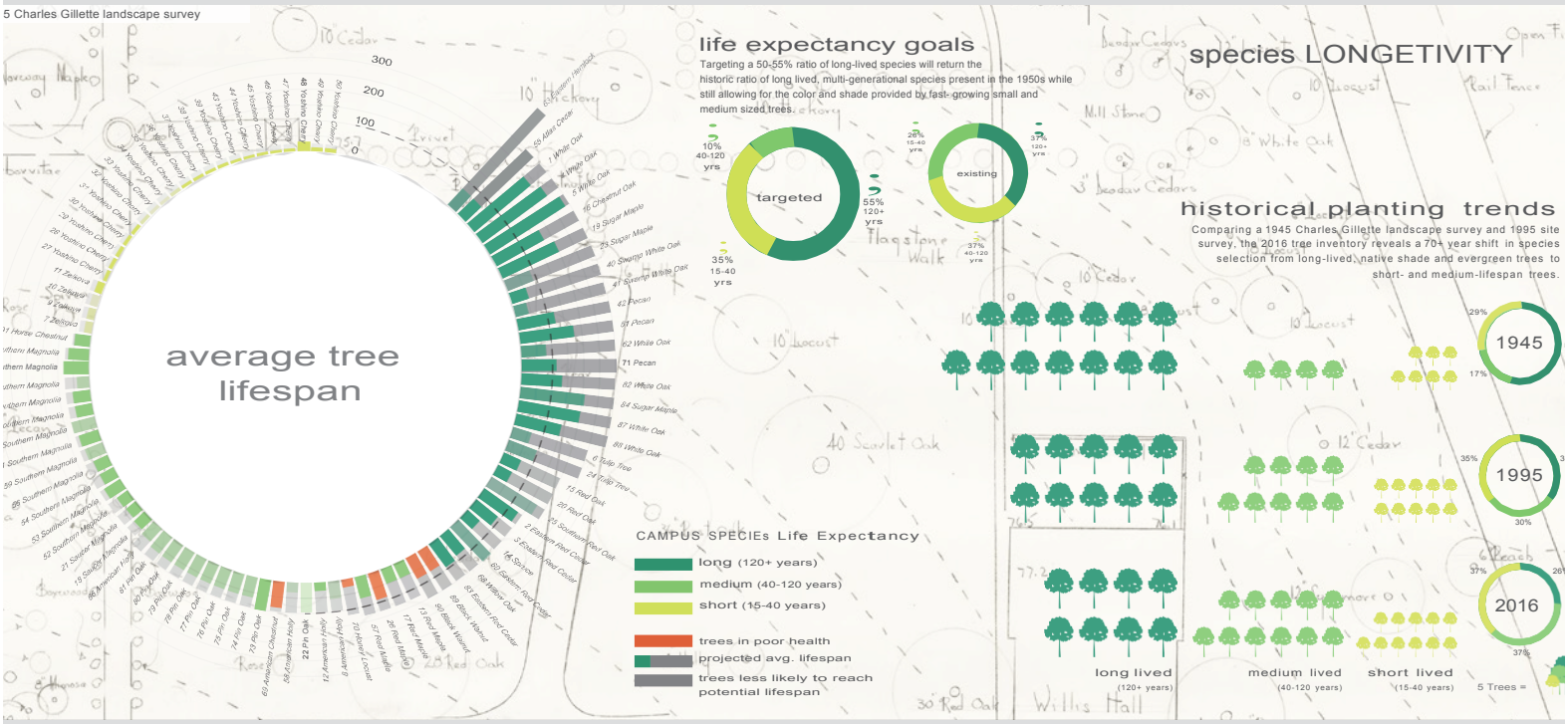
In order to build a "more sustainable, more global, and stronger Chatham Hall" over the next five years, a Chatham Hall alumna commissioned the design team to produce a comprehensive tree planting strategy for the 12-acre campus core.

The project began with an inventory of the existing trees documenting size, health, age, canopy and long term viability considering species and environmental impacts. Restoring the historic diversity of trees on campus with an emphasis on longer-lived canopy species was identified as a critical investment in Chatham Hall's future.

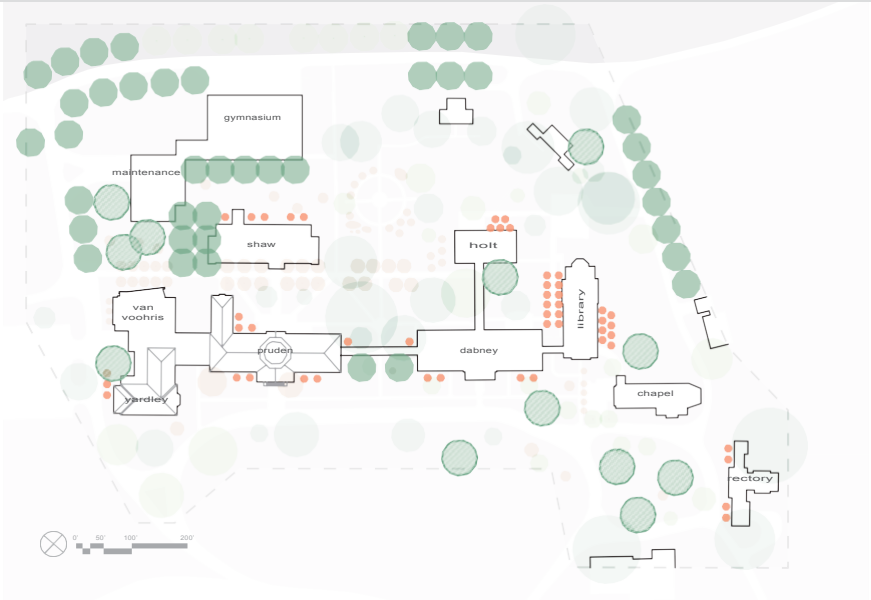
In addition to preserving the canopy-covered campus' iconic character and celebrating trees unique to the region, the addition of large canopy trees in common areas can provide a structure offering ecological and environmental benefits, including nesting conditions for birds and insects and cool enclosure for students and staff. The final product was a functional and educational document that could be a guideline for new tree installation, existing canopy preservation and a fundraising tool.

existing tree inventory + analysis

5 Charles Gillette landscape survey

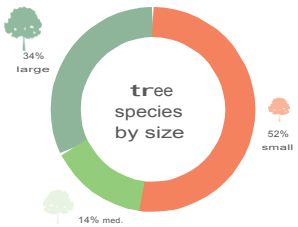


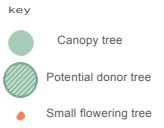
canopy design approach + implementation

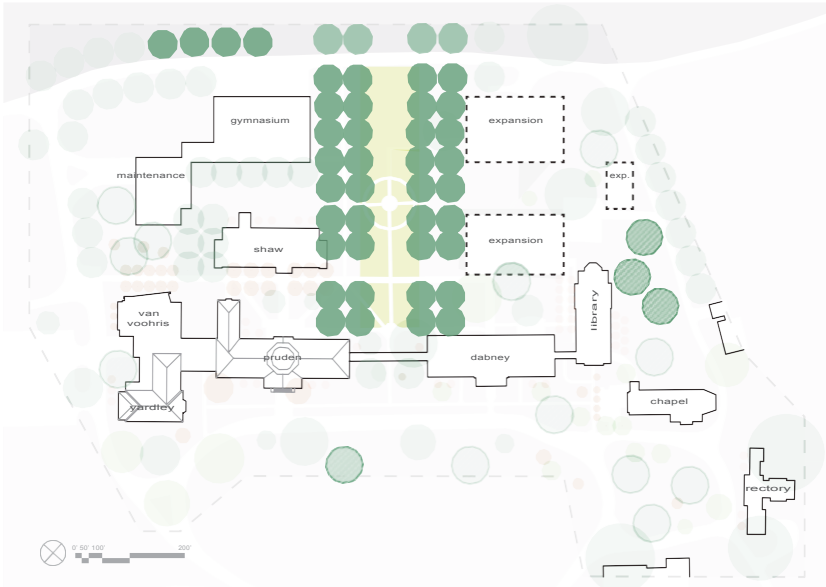


short-term implementation

Proposed locations add canopy to the edges of the campus core, fill in existing tree allees and identify key specimen locations outside of future master planning efforts.

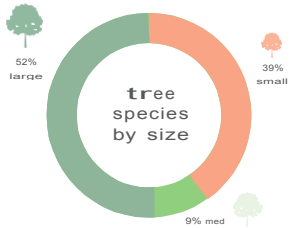


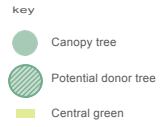




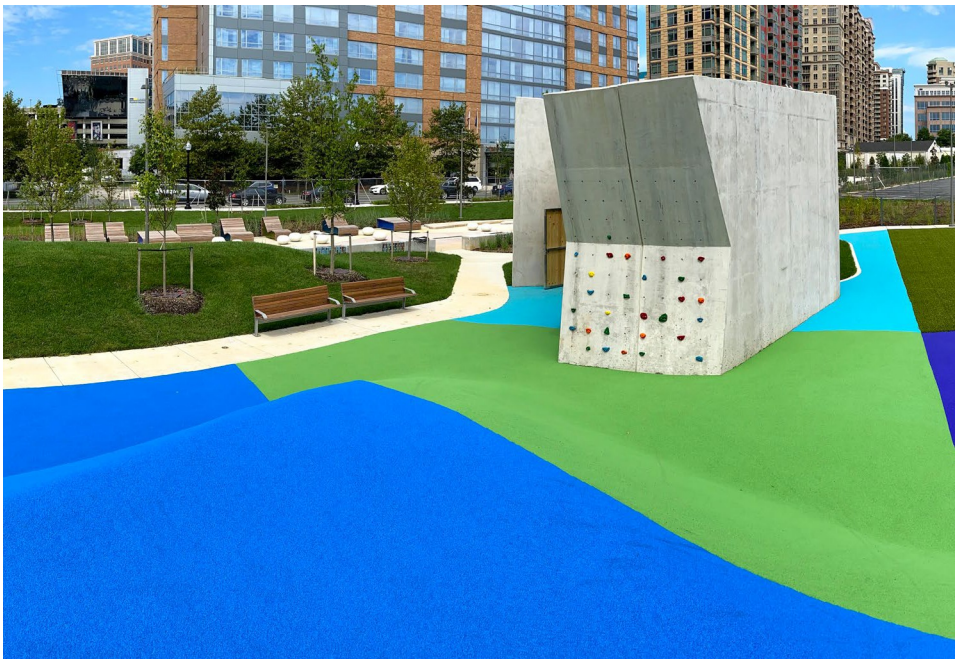
long-term implementation

As renovation and expansion continues, future tree planting should support an overall campus master plan and reinforce the central campus identity.





WOLF JOSEY



MOSAIC PARK

TYPE: PUBLIC PARK

CLIENT: ARLINGTON DEPT. OF PARKS AND RECREATION

LOCATION: ARLINGTON, VA

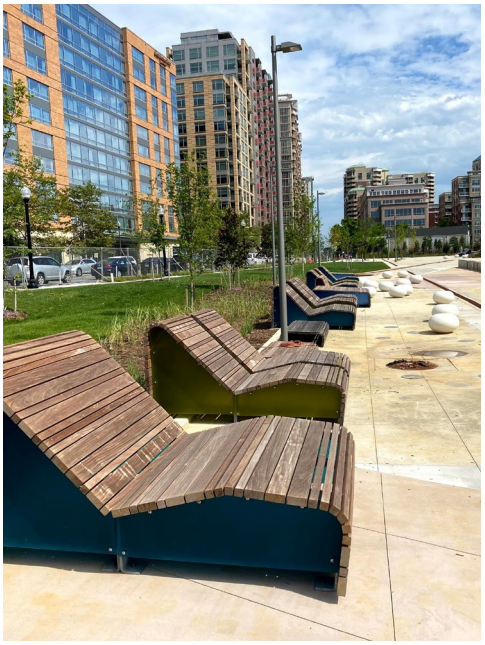
YEAR: 2011 - 2020

SCOPE OF SERVICES:

Schematic design, design development, construction documentation, construction administration

APPROVALS PROCESS:

Department of Environmental Services Commercial Building Permit



The close collaboration between OCULUS, Arlington County, and local community representatives produced a dynamic and exciting plan for a new urban park in the heart of Ballston. The park design responds to the wishes and needs of a diverse and vibrant urban population while projecting an inspiring vision of sustainability for the future.

The park's location between dense mixed-use development and smaller-scale residential neighborhoods calls for a site-sensitive design that will accommodate a complex set of activities. A shady urban plaza and interactive water feature address the more urban edge of the site while flexible, active-use recreation spaces and creative children's play areas border the residential neighborhood.

The park design also incorporates an ambitious plan for sustainability. A rain garden will filter stormwater runoff, collecting it in an underground cistern, where it will be re-directed into the park's passive irrigation system.

PENROSE SQUARE

TYPE:

CLIENT: ARLINGTON COUNTY

TEAM: RICHARD DEUTSCH

LOCATION: ARLINGTON, VA

YEAR: 2007 - 2012

SCOPE OF SERVICES:

APPROVALS PROCESS:

ENVIRONMENTAL ACCREDITATION:

OCULUS led a team of consultants to design Penrose Square Park. This urban plaza represents the first major step in the implementation of the Columbia Pike Corridor Concept Plan, a long-term planning effort in Arlington County. OCULUS collaborated extensively with adjacent communities, county officials, and a public artist to develop the Penrose Square Park as a flexible urban space that can accommodate a wide range of activities. OCULUS also consulted on the design of adjacent pedestrian-oriented streetscapes.

The design incorporates features to activate the plaza year-round. The central stone plaza can accommodate community fairs, art exhibits, performances and everyday use and incorporates an interactive water feature that provides a play area for children. Movable tables and chairs within a shady grove of honey locusts provide a space for casual gatherings of nearby residents and workers. An interactive sculpture, Echo by Richard Deutsch, provides additional interest.

The construction of Phase I of Penrose Square Park was completed in Fall 2012. Phase II will nearly double the size of the park and will incorporate additional planting, an enlarged plaza, and the reconfigured sculpture.

POWHATAN SPRINGS PARK

TYPE: PUBLIC PARK

CLIENT: ARLINGTON COUNTY

LOCATION: ARLINGTON, VA

YEAR: 2001 - 2004

SCOPE OF SERVICES:

Master Planning, Schematic Design, Design Development, Construction Documentation/ Administraton

Powhatan Springs Park includes several ambitious park program elements: a skate park, an administration building, play fields, concession area, and playground. With the help of a nationally recognized artist and a professional skateboarder, OCULUS designed a park master plan that integrates the program elements into a cohesive, award-winning landscape.

A unique feature of the larger park uses sustainable stormwater management principles as an opportunity to create a play area for children. The design exposes the stormwater system and uses art elements as cisterns. Water collected on the site is cleansed in bio-retention areas and channelled through the Children's Interactive Nature Area where children explore the processes of water collection and cleansing using non-traditional play pieces composed of interactive mechanical equipment, pumps, and pipes as the water is directed into an elevated open play channel that transports cleansed stormwater to an existing stream.

LUBBER RUN COMMUNITY CENTER

TYPE: PUBLIC PARK

CLIENT: ARLINGTON COUNTY

LOCATION: ARLINGTON, VA

YEAR: 2016-2020

SCOPE OF SERVICES:

Master Planning, public review process, schematic design, design development, construction documentation, construction administration

APPROVALS PROCESS:

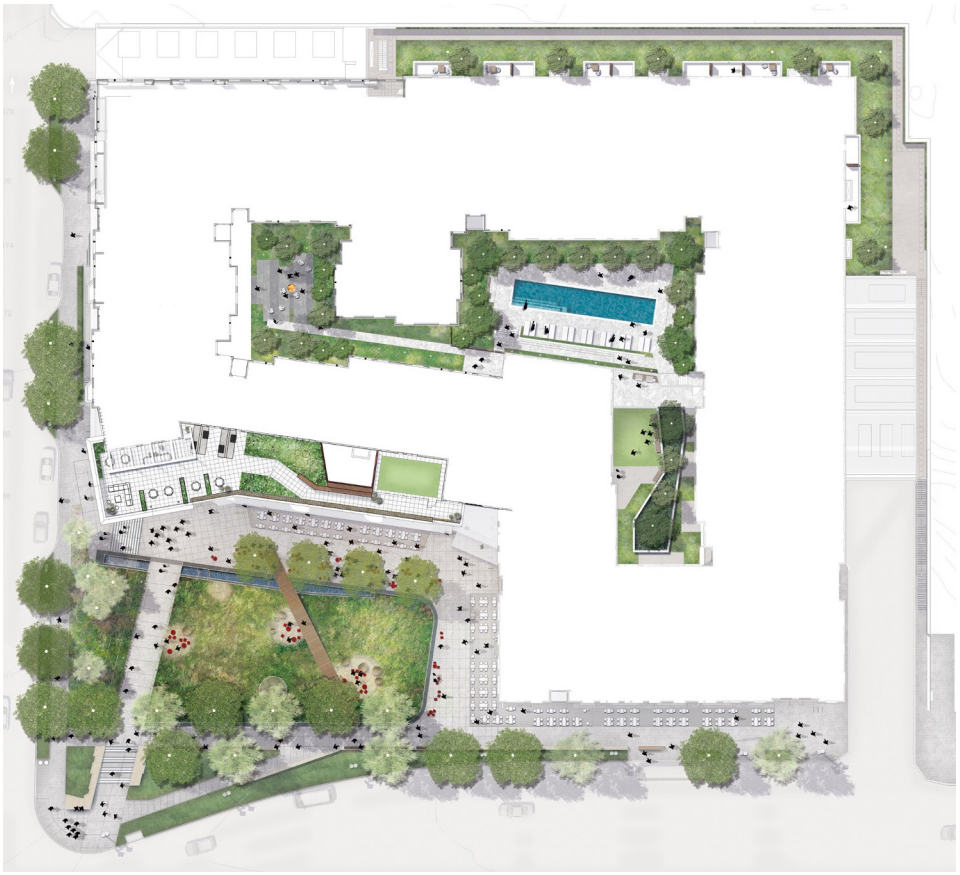
Arlington Landscape Plan Approvals

ENVIRONMENTAL ACCREDITATION:

LEED Gold (projected)

Scheduled to be complete in fall of 2020, the Lubber Run Community Center in Arlington County will replace the obsolete one built in the 1950s with one that optimizes the use of highly sustainable materials and methods. Located in the 20-acre Lubber Run Park and surrounded by residential neighborhoods and adjacent to an elementary school, the facility will include a preschool, a senior center, a gymnasium and fitness center, multi-purpose rooms for community and recreational programming, and offices for some seventy Department of Parks and Recreation employees. Through numerous public meetings, the neighboring community members expressed a strong desire to retain and enhance access to the site's natural and open-space qualities. As a result, vehicular parking and a portion of the center are located underground. This public engagement process, which included community meetings, online feedback, and on-site meetings with stakeholders, served as a catalyst for many of the directions the design has taken, especially with respect to sustainability measures, the preservation of trees across the 4.5-acre site, and the mitigation of visual and auditory impacts on adjacent properties.

Informed by Arlington County's General Land Use Plan, Open Space Master Plan, and Public Spaces Master Plan as well as through extensive community engagement, the plan for the center has been vetted and approved by the Public Facilities Review Commission and the Parks and Recreation Commission. A key component of the plan includes the careful and studied siting of the building to address tree preservation goals, to maximize open space for passive and active recreation, and to minimize impacts on the Lubber Run Resource Protection Area.



CENTRO ARLINGTON

TYPE: MIXED-USE DEVELOPMENT

CLIENT: ORR PARTNERS

TEAM: KGD ARCHITECTURE,

LOCATION: ARLINGTON, VA

YEAR: 2015-2019

SCOPE OF SERVICES:

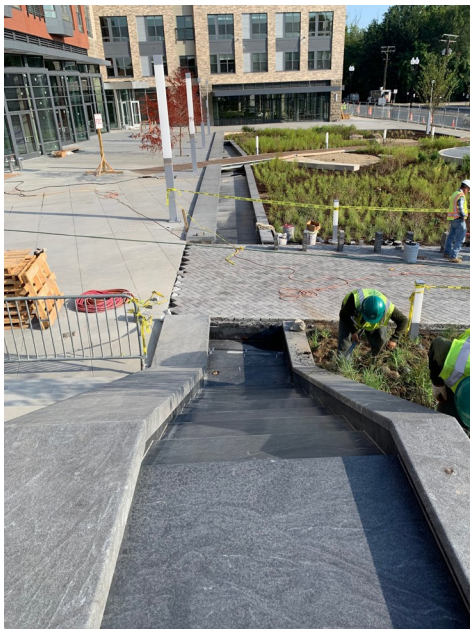
Schematic Design, Design Development, Construction Documentation, Construction Administration

APPROVALS PROCESS:

Form Based Code 4.1.2

Located on at Columbia Pike and George Mason Drive, Centro Arlington includes a grocery store, 6 stories of residential unts, rooftop amenity spaces, and a 18,000 square foot public park. The park creates an urban garden filled with native plants and provides a setting for public art sculptures. A linear water feature lines the western edge of the park, creating a seaing ledge for visitors. The park is flanked by larger plaza areas allowing for moveable furniture and outdoor dining areas for the retail level tenants.

The rooftop amenity spaces include a pool terrace, an intimate courtyard with a fire bowl centerpiece, and spill out space for the clubroom.

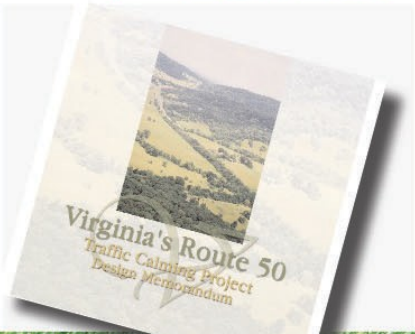


Middleburg/Route 50 Traffic Calming Measures
Middleburg, VA

CONTACT: *Christer P. Carshult, P.E.VDOT*
Project Coordinator
703-259-1765 (p)
Christer.Carshult@vdot.virginia.gov (e)

COST: *$523,000 (landscape arch. services over 15 years*
5 million construction (landscape over 15 years)

STATUS: *Preliminary Corridor Plan 2001-2003*
Construction in Upperville was completed in 2008; in Aldie in 2012;roundabouts at Gilbert's Corner were constructed in 2009 as part of a separate design build contract (by others); Construction was completed in Middleburg in 2016



About the Project

Traffic calming measures on Route 50 were designed to increase highway safety by reducing speeding and aggressive driving through roadway design that naturally encourages motorists to drive at slower and safer speeds.

The project began in 1995 with a community-designed traffic calming conceptual plan. Local citizens hired an international expert in traffic calming to work closely with the community in developing a traffic calming plan. The award-winning plan resulted in a $13.8 million federal demonstration grant for rural traffic calming.

Firm Role and Services Provided

L/KLA served as the landscape architect on a multi-disciplined team that prepared conceptual and preliminary and final engineering plans for traffic calming measures along twenty miles of U.S. Route 50 in Virginia. The design team was led by H.W. Lochner, Inc. and included experts on traffic calming, roundabouts, landscape architecture, engineering and historic preservation.

The traffic calming projects propose speed limits of 25 m.p.h. within the towns and 50 m.p.h. on the rural roadway, with transition zones of 35 m.p.h. approaching the towns. The design includes:

- Entryway treatments for Upperville, Middleburg, and Aldie
- Special warning strips approaching the entrances to villages and towns
- In-town measures including raised intersections, valley gutters, and the use of different pavers to narrow the look and feel of the road
- Changes to in-town horizontal alignment deflect the path of vehicles
- Rural intersection treatments to protect left turning traffic

Cost-effective solutions for reducing the visual contrast of concrete included the use of exposed aggregate and a slight tint to take away the bright white look of all exposed concrete surfaces

L/KLA continued its fifteen-year effort in Middleburg, L/KLA worked with the Town, its streetscape committee, and VDOT to incorporate the federally funded traffic calming measures into an ongoing streetscape renovation.

L/KLA was responsible for developing design concepts to ensure the project fit within Middleburg's historic context, including preliminary and final design plans for:

- Curb extensions incorporated into eight intersections within the historic downtown
- Working with the Town to select historically appropriate materials including vehicular clay pavers for crosswalks and matching existing brick pavers for the sidewalk areas
- Installing new and expanding existing tree wells and incorporate soil cells, where appropriate to expand the root zone
- Detailed design to carefully match existing conditions along the construction limits for the project
- Worked with VDOT staff to develop special provisions for specialized project details not utilized on previous VDOT projects including soil cells and vehicular clay pavers

BEFORE

TRAFFIC CALMING AT SE CORNER OF PENDLETON & WASHINGTON ST.

AFTER

Before and after renderings (bottom) and completed construction project in Middelburg

Outcomes

Over fifteen years, the national demonstration project for rural traffic calming included preliminary and final design plans leading to constructed measures in Upperville (2007), Aldie (2012), and Middleburg (2016). Installed measures included warning strips approaching town, gateway features, splitter islands, curb extensions and intersection treatments. A system of roundabouts was installed at Route 50 and Gilberts Corners by others using preliminary plans prepared by the original design team (2009).

Before and after traffic analyses conducted by VDOT to evaluate the traffic calming measures in Upperville resulted in, for the overall 85th percentile (the speed at which 85% of the traffic is moving), significant reductions of travel speeds of 15-16 miles per hour in the transition areas entering towns. In addition to the reduced travel speeds, there was a 70% measured reduction in crash incidence.

After fifteen years, construction of a four-lane highway was averted and the Route 50 corridor between Gilbert's Corner and Upperville is much safer. The level of service at a major regional intersection has been improved, and most important, the character defining features of this nationally significant scenic and historic corridor have been preserved and maintained.

Nachusa Visitor Use Center at Nachusa Grasslands
Franklin Grove, IL

Rendered perspective model of the Visitor Use Center at Nachusa Grasslands.

Nachusa Visitor Use Center, construction almost completed, October 2017.

L/KLA led the multi-discipline design for the development of the Visitor Use Center at Nachusa Grasslands, a property owned and operated by The Nature Conservancy in Illinois. Over 4,000 acres in size, the preserve is located in north central Illinois. It encompasses patches of remnant prairie and acres of restored prairie plantings, primarily installed by volunteers.

The Visitor Use Center's structures are influenced by the prairie itself and incorporate elements drawn from the surrounding landscape, connecting the structure with the land. The shed roof, clad with a standing seam metal roof reflects the vase prairie sky. The limestone seat walls, constructed of stone quarried within 100 miles of the site reflect the horizontal orientation of the prairie and the geological outcrops. The structures' columns, canted at an angle, reflect that late summer prairie as it sways in the wind.

The sequence of arrival is designed to draw people from the visitor center along an ADA accessible pathway into the prairie, introducing them to the complex grassland ecosystem and the recently introduced bison that serve as one of several prairie management tools. Visitors are greeted with nine interpretive panels explaining the site's history, the importance of this reserve, its unique flowers and wildlife and the importance of this habitat and The Nature Conservancy's role in protecting it.

The Visitor Use Center was completed in fall of 2017.

Neabsco Creek Boardwalk
Woodbridge, VA

CONTACT: *Brendon Hanafin, Capital Projects Division Chief*
Prince William County Department of Parks
703-792-7060 (p) bhanafin@pwcgov.org(e)

COST: *4.5 million (construction)*

STATUS: *Completed June 2019*

STAFF: *Jim Klein, Project Director/Landscape Architect; Lori Moore, Landscape Architect (Implementation)*

About the Project

The Neabsco Creek Boardwalk, a critical linkage of the Potomac Heritage National Scenic Trail, connects Rippon Lodge and Rippon Landing Park with the Metz Wetlands and nearby neighborhoods. The boardwalk has become a regional destination for wildlife viewing, outdoor education and nature appreciation for all ages and abilities. The boardwalk provides significant educational opportunities for students ranging from pre-K to graduate school–telling the story of the ebb and flow of Neabsco Creek and its inhabitants through the day, the month, the year, and over our lifetime and beyond. Landing areas at each end of the boardwalk include orientation space suitable for a classroom with staging areas near each landing to accommodate school field trips. A pier at the south landing allows students of all ages to get up close and personal with the aquatic life of Neabsco Creek.

Firm Role and Services Provided

L/KLA served as the prime contractor and project lead for all phases of the project design including preliminary and final design, public outreach, permitting, bidding and construction phase services. Permitting included a Conditional Letter of Map Revision (FEMA), NEPA, USACE, and various state and local regulatory approvals.

Process and Goals

Establishing the boardwalk as a destination unto itself required a design approach that showcased stunning views of abundant wildlife and the broad expanse of the rich aquatic habitats found there. To truly serve as a destination, the boardwalk must enable a sensory and visual experience unmatched elsewhere.

With a limited palette of wood and steel, L/KLA used the plant communities themselves to structure the boardwalk alignment. Long and graceful curves helped provide striking views of each of the distinct ecological niches found throughout Neabsco Creek while the boardwalk drops in elevation periodically to immerse visitors in the wetland environment. Undulating alignments work hand in hand with the natural tidal and flooding patterns.

The project was developed through the office of the local Board of Supervisor's District with the assistance of the stakeholder committee. The committee included representatives from trail user groups and local, state, and federal government agencies. The County Department of Parks and Recreation provided the project management and contracting services through all phases of the project and is responsible for managing and maintaining the project.

L/KLA worked with the client and this group of dedicated stakeholders on how best to achieve the dual goal of enabling the public to enjoy nature's beauty while preserving a delicate ecosystem. L/KLA's collaborative design approach of working closely with the project's stakeholders and technical consultants established a high-quality user experience supported by a resilient design that addresses the complex issues associated with flooding, storm surge, and related environmental permitting.

The design team, led by L/KLA, conducted extensive research and inventory work to fully understand both the natural and cultural features of Neabsco Creek, including the complex hydrology of the braided channels and associated wetlands. Flood studies ensured the boardwalk would not negatively impact adjoining properties. Geotechnical studies indicated necessary engineering properties, such as how deep the piles should be driven to maintain boardwalk stability. Archaeologists studied the geologic history of the braided channels, noting the differences between the older gravel channels on the south side and the more recent channels with their deep mucky bottoms on the north side, while confirming that the project would not adversely affect any archeological resources.

Outcomes

Since the day it opened on National Trails Day, June 1, 2019, the Neabsco Creek Boardwalk has become that desired destination for nature appreciation, birding, photography, exercise and just sheer enjoyment. Neighborhoods and schools are better connected, as are parks, natural areas and historic sites. Perhaps the best sign of success is the conversation one morning with an older gentleman who simply stated, "This is so great for me. I come here every day - it is better than my daily aspirin!"

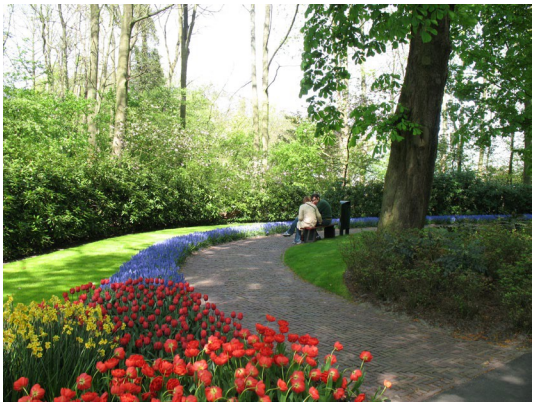
In terms of sustainability, a key design and construction approach was the construction technique where each segment of the boardwalk was built from the previously constructed segment. This approach, referred to as "top-down" construction, has minimal impact on sensitive wetland environments and prevents heavy construction equipment from entering the fragile aquatic ecosystems. No signs of construction activity were visible on opening day.

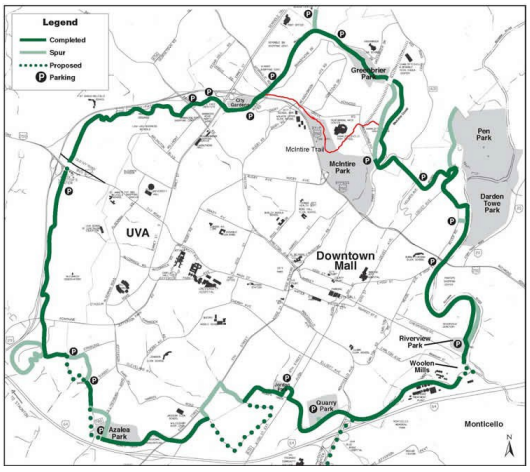
While too soon to determine success in terms of sustainability and performance, the boardwalk is a design and construction triumph, providing both public access and environmental protection by taking advantage of the area's natural beauty, abundant wildlife, and a vibrant wetland habitat. The project transformed what was once a barrier between neighborhoods, schools, and other significant historic and natural sites and attractions by creating a newly designated regional park with the boardwalk as its centerpiece and connective tissue.

PROJECT EXAMPLES

McIntire Botanical Garden Master Plan

Charlottesville, Virginia





Project Description

Kennon Williams Landscape Studio has created master plan studies for the redevelopment of McIntire Park as a botanical garden and more inclusive public park. McIntire Park is situated virtually in the heart of the downtown Charlottesville and now holds a nearly defunct golf course. The McIntire Botanical Garden Foundation hired KWLS to explore plans that would enliven the park and make it a regional draw for recreation, environmental education, and the display of regionally significant plants and landscape practices.

PROJECT EXAMPLES

Lewis Ginter Botanical Garden Hydrological Master Plan

Richmond, Virginia

Status:
Design Development Phase

Awards:
Virginia ASLA Honor Award for Analysis and Planning

Project Description

Lewis Ginter Botanical Garden requested this plan to move the Garden toward greater environmental responsibility and to demonstrate the intersection of garden design and sustainable practice especially with regard to hydrologic systems. As part of the Chesapeake Bay watershed, the Garden wanted to set an example of landscape and watershed stewardship for its quarter million annual visitors. Though the name of the plan sounds quite technical, inherent in the effort was the charge to demonstrate that sustainable site design could fit in and be a part of beautiful landscapes and gardens. To that end, the plan involved the complete redesign of at least one third of the Garden's 80 acres and the creation of new garden areas that would display the latest in green site technology while holding to the garden's high aesthetic standards. As the Senior Project Manager and Designer on the project with Nelson Byrd Woltz Landscape Architects (NBWLA), Kennon Williams led this design effort and wrote the 60 page Master Plan Booklet that was the culmination of the design plan effort.

The project is now in more detailed design stages Greening Urban has teamed with KWLS on one phase of the project, providing sustainable technology design and civil engineering.

Pamplin Historical Park

Pamplin Historical Park

Civil War Adventure Camp | Peeble's Farm Battlefield

Pamplin Historical Park and
The National Museum of the Civil War Soldier

Dinwiddie County, Virginia

Client: The Pamplin Foundation

The Civil War Adventure Camp immerses participants in the life of a Civil War soldier. The camp is located within the 59-acre Hart Farm, the location of the Battle of Peeble's Farm on October 2, 1864. Six months later, 14,000 Union soldiers launched a massive assault that completely overran the Confederate line during the April 2, 1865, Breakthrough Battle. The replica encampment is based on historical research and includes a cookhouse, field hospital, four-person huts, fourteen-person barracks, five two-person tents on platforms, and fly tents for programming. The setting for the camp includes the restored Gothic-revival Hart farm house built just before the Civil War and remnants of a line of Confederate fieldworks.

Services provided include facility master planning, site planning, siting of all new buildings and site circulation, grading and drainage design, design of fencing and plantings, and historical research of Civil War encampment layouts and structures.

RMLA principal Rob McGinnis served as the principal-in-charge for the facility master planning while with OCULUS and served as the lead designer and landscape architect for all site development while with JMA.

Pamplin Historical Park

National Gallery of Art East Building Sculpture Terrace

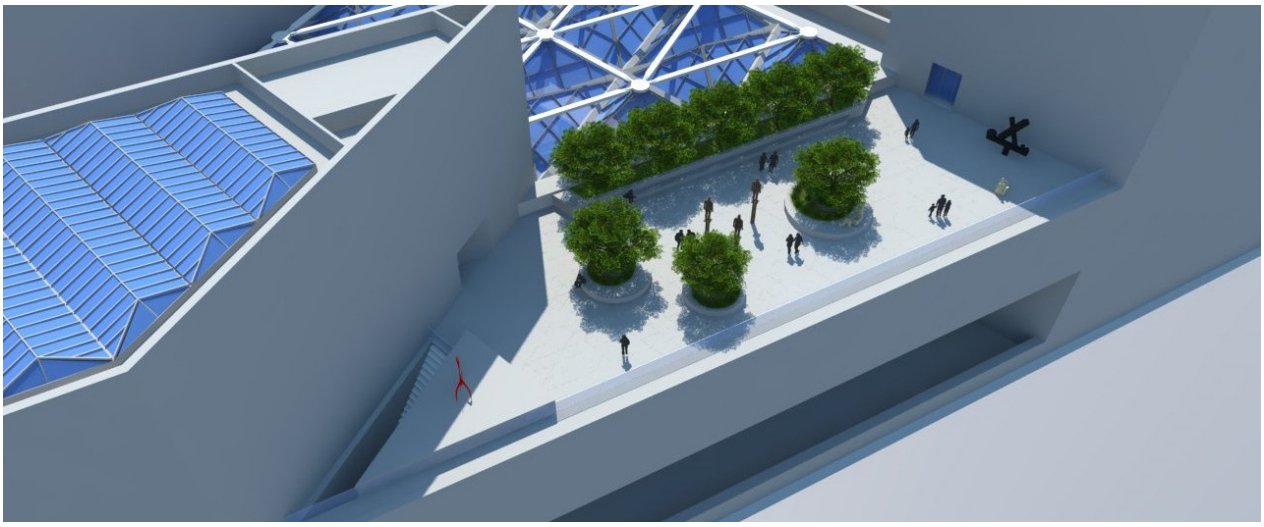
Washington, DC

Client: National Gallery of Art and Hartman Cox Architects

A new Level 6 Sculpture Terrace was designed in collaboration with Hartman Cox Architects with the intention of honoring the legacy of the collaboration between architect I.M. Pei and landscape architect Dan Kiley in the design of the East Building and to incorporate contemporary landscape architectural best practices.

The Level 6 Sculpture Terrace connects two new indoor gallery spaces and provides a new 6,100-square-foot outdoor space for exhibits and museum events. The granite paving and seating stone was selected to be compatible with the building's marble cladding and plants were selected to withstand the severe rooftop conditions. Additional special design considerations included not only the installation of sculptures within the terrace, but the use of the terrace to move artwork between the indoor galleries as well. Several alternative designs for the space were developed to explore the relationship between Kiley's landscape and Pei's architecture, and the terrace's visibility from Pennsylvania Avenue.

RMLA principal Rob McGinnis served as the landscape principal and landscape project manager while with OCULUS.



OCULUS

Appendix F

Impacts of Landscape Architecture on the Public Health, Safety, and Welfare, How Licensure Protects the Public

Impact of Landscape Architecture on the Public Health, Safety, and Welfare
How Licensure Protects the Public

Element of Practice	Harm to public health, safety, & welfare due to malpractice	Education*	LARE: Ensuring Competence▽
Grading & Drainage	• Negligent design of sidewalk caused water to pool & form ice in city park, causing a fall with serious head injury[1] • Specification of raised landscape edging linked to injury[2] • Sidewalk/curb sections meet at four elevations, causing injury[3] • Protrusion of a threshold cover plate created danger and injured wheelchair user[4] • Poor irrigation design results in inefficient water use, aggravating drought conditions • Property damage results from negligent design of retaining wall[5] • Grading & related design elements fail to protect property from slope subsidence[6] • Poor grading, in combination with other design flaws, resulted in serious property damage[7] • Inappropriate specification and supervision of grading results in excessive fill, erosion problems, even landslides[8]	Year 1 • Mathematics • Natural Science Elective • Design Process & Design Foundations Year 2 • Ecology: Treating plants, animals, and humans as one integrated whole; problems of environmental quality and resource use. Year 3 • Geology for Civil Engineers: Taught by the Geology department, this course provides the principles of physical and engineering geology; properties of minerals, rocks, and soils; active surface and subsurface processes; applications to the siting, design, construction, operation and maintenance of engineered works and the protection of the environment. • Landscape Construction 1: Aspects of land manipulation and consideration of earth bound elements in landscape development; contours, landform grading design, drainage principles, cut and fill computations, basic hydraulics, drafting. • Design studio begins teaching actual land design process, combining the natural systems (landform, water, vegetation, wildlife habitat, soils, climate) with man-built systems (roads, buildings, utilities). Year 4 • Design Studio delves into more complex situations that include grading & drainage issues within the scope of the program. • Landscape Construction 3: Construction document preparation, working drawings, project	**Section 1** • Grading and drainage is addressed by testing the candidate's ability to select the proper project team, prepare project deliverables, conduct and document construction-related actions, attend substantial completion, respond to RFIs, coordinate with contractors, prepare drawing revisions and clarification sketches, prepare punch lists, attend final completion, conduct warrant review, and collect and analyze performance metrics. • 40% of the content of Section 1 is focused on project management including selection and communication with project team, and preparation and review of project deliverables, and 30% on construction related activities. • The intent of Section 1 is to test a candidate's competency in the identified area concerning process and procedure as other sections focus on design. **Section 2** • Grading and drainage would be applicable to both the Site Inventory (35% of the section) and Physical Analysis (40% of the section) portions of the section. **Section 3** • The Master Planning section makes up 45% of Section 3 and includes elements such as analysis of natural site conditions which includes existing topography and drainage on a site. • The Site Design section makes up 46% of Section 3 and includes understanding and being able to read topography as it relates to

Element of Practice	Harm to public health, safety, & welfare due to malpractice	Education*	LARE: Ensuring Competence▽
Grading & Drainage (cont.)		layout and design; theory and principles of irrigation design. Year 5 • Design Studio includes more advanced site scale problems that include major design project supported with complete programming, design and project management components.	site planning and site selection. It also tests on a general knowledge of site grading as it relates to building layout, parking layout, hardscape, and other landscape elements. **Section 4** • Grading and Drainage is addressed by testing the candidate's depth of knowledge and ability to read, understand, interpret, and/or prepare: topographic maps, stormwater pollution prevention plans, site protection plans, layout plans, grading and drainage plans, sections, elevations, and profiles, drainage construction details, and stormwater management plans. Furthermore, the section tests the candidate on construction documentation best practices and industry standards for these topics.
Stormwater Management	• Negligent calculation and provision for stormwater drainage can result in flooding & costly damage to adjacent buildings, walkways, highways, & public facilities[9] • Improperly specified relationships between water supplies & water drainage facilities can result in contamination of community water supply	Year 1 • Mathematics • Natural Science elective • Design Process & Design Foundations Year 2 • Ecology: Treating plants, animals, and humans as one integrated whole; problems of environmental quality and resource use. Year 3 • Geology for Civil Engineers: Taught by the Geology department, this course provides the principles of physical and engineering geology;	**Section 1** • Stormwater management is addressed by testing the candidate's ability to select the proper project team, determine project scope, schedule, and budget, manage the project team, establish quality control procedures, facilitate meetings coordinate work of/with other disciplines, obtain permits, prepare project deliverables, conduct and document construction-related actions, attend substantial completion, respond to RFIs, coordinate with contractors, review submittals, prepare drawing revisions and clarification sketches, conduct and document construction-related

Element of Practice	Harm to public health, safety, & welfare due to malpractice	Education*	LARE: Ensuring Competence▽
Stormwater management (cont.)		properties of minerals, rocks, and soils; active surface and subsurface processes; applications to the siting, design, construction, operation and maintenance of engineered works and the protection of the environment. • Landscape Construction 1: Aspects of land manipulation and consideration of earth bound elements in landscape development; contours, landform grading design, drainage principles, cut and fill computations, basic hydraulics, drafting. • Design studio begins teaching actual land design process, combining the natural systems (landform, water, vegetation, wildlife habitat, soils, climate) with man-built systems (roads, buildings, utilities). Year 4 & 5 • Landscape Construction 3: Construction document preparation, working drawings, project layout and design; theory and principles of irrigation design. • Design Studio delves into more complex situations, including major design projects supported with complete programming, design and project management components.	action, prepare punch lists, attend final completion, conduct warrant review, and collect and analyze performance metrics. **Section 2** • Stormwater management would be applicable to both the Site Inventory (35% of the section) and Physical Analysis (40% of the section) portions of the section. **Section 3** • The Site Design section makes up 46% of Section 3 and includes the understanding of stormwater management and how it could affect the programming of a site as well as a conceptual design. **Section 4** • Storrmwater Management is addressed by testing the candidate's depth of knowledge and ability to read, understand, interpret, and/or prepare: topographic maps, stormwater pollution prevention plans, site protection plans, wetland mitigation plans, layout plans, grading and drainage plans, sections, elevations, and profiles, drainage construction details, and stormwater management plans including systems which employ conventional inlet structures and pipe, natural drainage systems, and infiltration systems for groundwater and aquifer recharge. Furthermore, the section tests the candidate on construction documentation best practices and industry standards for stormwater control structures and site features.

Element of Practice	Harm to public health, safety, & welfare due to malpractice	Education*	LARE: Ensuring Competence▽
Security & Safety Issues	• Landscape plan enables illicit entry into apartment building[10] • Failure to use appropriate signage during construction can cause fatal collisions[11]	Year 1 • Mathematics • Design Process & Design Foundations Year 2 • Ecology: Treating plants, animals, and humans as one integrated whole; problems of environmental quality and resource use. • Construction Materials and methods: Emphasis on design, specification, and use of concrete, masonry, and wood. Year 3 • Design studio begins teaching actual land design process, combining the natural systems (landform, water, vegetation, wildlife habitat, soils, climate) with man-built systems (roads, buildings, utilities). • Landscape Plant Materials: Identification and use of indigenous and introduced landscape plants; plants for special uses in urban environments; emphasis on plants' ornamental attributes, cultural requirements, and adaptability in urban and suburban environments. Year 4 & 5 • Urban Issues: Includes topics such as traffic & congestion, crime, public health, and other quality of life issues. • Design Studio delves into more complex situations, including major design projects supported with complete programming, design and project management components. • Internship will provide real-situation experience with these issues (must work under a licensed	**Section 1** • Security and safety issues are addressed by testing the candidate's ability to select the proper project team, determine project scope, schedule, and budget, manage the project team, establish quality control procedures, facilitate meetings coordinate work of/with other disciplines, obtain permits, prepare project deliverables, conduct and document construction-related actions. **Section 2** • Security and safety items/issues would be applicable the Site Inventory (35% of the section), Physical Analysis (40% of the section), and Contextual Analysis (25% of the section) portions of the section. **Section 3** • Site Design section is 46% of Section 3 and consists of problems that incorporate the fundamentals of site planning, including the functional relationships among program elements, siting buildings & structures, plantings, lighting, and organizing the physical elements on a site. The problems test the development of strategies for security and crime prevention through environmental design (CPTED) **Section 4** • Security and Safety Issues are addressed by testing the candidate's depth of knowledge and ability to read, understand, interpret, and/or prepare: existing conditions, demolition plans, stormwater pollution prevention plans, site protection plans, layout plans, grading and drainage plans, planting plans, materials plans, sections, elevations, and profiles,

Element of Practice	Harm to public health, safety, & welfare due to malpractice	Education*	LARE: Ensuring Competence▽
Security & Safety Issues (cont.)		landscape architect).	construction details, as well as plans for site infrastructure, irrigation, lighting, site furnishings, signage and wayfinding, traffic control, emergency access, and stormwater management. Furthermore, the section tests the candidate on code requirements, specifications, construction documentation best practices and industry standards for security related site improvements including, but not limited to: barriers, walls, fences, bollards, planters, and lighting.
Site Elements & Streetscape design	• Obstructed views at intersections result in collisions killing & injuring pedestrians, cyclists, drivers & passengers[12] • Injuries can occur when design fails to integrate suitable signage[13] • Inadequate care for tread & riser design leads to dangerous stairways[14] • Poor irrigation design, deficient plant selection & grading resulted in structural damage to nearby buildings[15] • Unsuitable specification of materials for the local climate can render a venue unusable[16] • Parks & playgrounds can injure or kill children if improperly specified with materials appropriate to the expected use	Year 1 • Mathematics • Natural Science Elective • Design Process & Design Foundations • Introduction to Landscape Architecture Year 2 • Ecology: Treating plants, animals, and humans as one integrated whole; problems of environmental quality and resource use. • Construction Materials and methods: Emphasis on design, specification, and use of concrete, masonry, and wood. Year 3 • Geology for Civil Engineers: Taught by the Geology department, this course provides the principles of physical and engineering geology; properties of minerals, rocks, and soils; active surface and subsurface processes; applications to the siting, design, construction, operation and maintenance of engineered works and the protection of the environment. • Design studio begins teaching actual land design	**Section 1** • Site elements and streetscape design are addressed by testing the candidate's ability to select the proper project team, determine project scope, schedule, and budget, manage the project team, establish quality control procedures, facilitate meetings coordinate work of/with other disciplines, obtain permits, prepare project deliverables, conduct and document construction-related actions, attend substantial completion, respond to RFIs, coordinate with contractors, review submittals, prepare drawing revisions and clarification sketches, conduct and document construction-related action, prepare punch lists, attend final completion, conduct warrant review, and collect and analyze performance metrics. **Section 2** • Site elements and streetscape design items/issues would be applicable to the Site Inventory (35% of the section), Physical Analysis (40% of the section), and Contextual Analysis (25% of the section) portions of the section.

Element of Practice	Harm to public health, safety, & welfare due to malpractice	Education*	LARE: Ensuring Competence▽
Site elements & Streetscape design (cont.)	& climate[17] • Improperly designed retaining walls can cause physical injury upon collapse, as well as an adverse environmental impact • Omitting accommodations for persons with disabilities has caused clients to be out of compliance with the Americans with Disabilities Act, adding costly delays to projects	process, combining the natural systems (landform, water, vegetation, wildlife habitat, soils, climate) with man-built systems (roads, buildings, utilities). • Landscape Construction 1: Aspects of land manipulation and consideration of earth bound elements in landscape development; contours, landform grading design, drainage principles, cut and fill computations, basic hydraulics, drafting. • Landscape Construction 2: Construction elements found in landscape development; statics and mechanics of simple structures; wood, masonry, concrete construction procedures and techniques. • Woody Ornamental Plants: Identification, morphology, classification, nomenclature, and adaptability for use in landscape environments. • Landscape Plant Materials: Identification and use of indigenous and introduced landscape plants; plants for special uses in urban environments; emphasis on plants' ornamental attributes, cultural requirements, and adaptability in urban and suburban environments. Year 4 • Design Studio delves into more complex situations that include grading & drainage issues within the scope of the program. • Landscape Construction 3: Construction document preparation, working drawings, project layout and design; theory and principles of irrigation design. • Sustainable Communities: Principles of sustainability that they are expected to apply in	**Section 3** • The Master Planning Section is 45% of Section 3 and includes site selection and analyzing site elements to determine opportunities and constraints of a site. • Site Design is 46% of Section 3 and covers applying the site analysis through creating, evaluating, and refining design solutions. It also includes preparing presentation drawings and development performance metrics. **Section 4** • Site Elements & Streetscape Design is addressed by testing the candidate's depth of knowledge and ability to read, understand, interpret, and/or prepare: existing conditions, demolition plans, stormwater pollution prevention plans, site protection plans, layout plans, grading and drainage plans, planting plans, materials plans, sections, elevations, and profiles, construction details, as well as plans for site infrastructure, irrigation, lighting, site furnishings, signage and wayfinding, traffic control, emergency access, and stormwater management. Furthermore, the section tests the candidate on code requirements, specifications, construction documentation best practices and industry standards for site elements including, but not limited to: paving, walls, structures, furnishings, lighting, drainage, and planting.

Element of Practice	Harm to public health, safety, & welfare due to malpractice	Education*	LARE: Ensuring Competence▽
Site elements & Streetscape design (cont.)		design studio • Internship will provide real-situation experience with these issues (must work under a licensed landscape architect) Year 5 • Design Studio includes more advanced site scale problems that include major design project supported with complete programming, design and project management components. • Land Development: Financially feasible, environmentally sustainable, project design/construction/finance processes; resolution of site & environmental issues with market and financial considerations; design concepts for value enhancement of land, residential, commercial and retail development.	
Erosion and Sediment Controls	• Malpractice responsible for significant property damage due to excess water, sediment, sand and debris flowing into adjacent property[18] • Negligent design not only fails to control erosion, but contributes to the problem[19]	Year 1 • Mathematics • Natural Science Elective • Design Process & Design Foundations Year 2 • Ecology: Treating plants, animals, and humans as one integrated whole; problems of environmental quality and resource use. Year 3 • Geology for Civil Engineers: Taught by the Geology department, this course provides the principles of physical and engineering geology; properties of minerals, rocks, and soils; active surface and subsurface processes; applications to the siting, design, construction, operation and maintenance of engineered works and the protection of the environment.	**Section 1** • Erosion and sediment controls are addressed by testing the candidate's ability to select the proper project team, determine project scope, schedule, and budget, manage the project team, establish quality control procedures, facilitate meetings coordinate work of/with other disciplines, obtain permits, prepare project deliverables, conduct and document construction-related actions, attend substantial completion, respond to RFIs, coordinate with contractors, review submittals, prepare drawing revisions and clarification sketches, conduct and document construction-related action, prepare punch lists, attend final completion, conduct warrant review, and collect and analyze performance metrics. **Section 2** • Erosion and sediment controls would be

Element of Practice	Harm to public health, safety, & welfare due to malpractice	Education*	LARE: Ensuring Competence▽
Erosion and Sediment Controls (cont.)		• Landscape Construction 1: Aspects of land manipulation and consideration of earth bound elements in landscape development; contours, landform grading design, drainage principles, cut and fill computations, basic hydraulics, drafting. • Design studio begins teaching actual land design process, combining the natural systems (landform, water, vegetation, wildlife habitat, soils, climate) with man-built systems (roads, buildings, utilities). Year 4 & 5 • Design Studio delves into more complex situations, including major design projects supported with complete programming, design and project management components.	applicable to both the Site Inventory (35% of the section) and Physical Analysis (40% of the section) portions of the section. **Section 3** • Site Design is 46% of Section 3 and includes the understanding of Erosion and Sediment Controls and how these relate to site inventory and analysis as well as how it could affect the programming of a site. **Section 4** • Erosion & Sediment Control is addressed by testing the candidate's depth of knowledge and ability to read, understand, interpret, and/or prepare: existing conditions, demolition plans, stormwater pollution prevention plans, site protection plans, layout plans, grading and drainage plans, planting plans, materials plans, sections, elevations, and profiles, construction details, as well as plans for site infrastructure, irrigation, and stormwater management. Furthermore, the section tests the candidate on code requirements, specifications, construction documentation best practices and industry standards for erosion control and stormwater management.
Barrier Design	• Fatal falls & serious injury result from improperly specified barriers that fail to conform to building code[20]	Year 1 • Mathematics • Design Process & Design Foundations Year 3 • Design studio begins teaching actual land design process, combining the natural systems (landform, water, vegetation, wildlife habitat, soils, climate) with man-built systems (roads, buildings, utilities).	**Section 1** • Barrier design are addressed by testing the candidate's ability to select the proper project team, determine project scope, schedule, and budget, manage the project team, establish quality control procedures, facilitate meetings coordinate work of/with other disciplines, obtain permits, prepare project deliverables, conduct and document construction-related

Element of Practice	Harm to public health, safety, & welfare due to malpractice	Education*	LARE: Ensuring Competence▽
Barrier Design (cont.)		• Landscape Construction 2: Construction elements found in landscape development; statics and mechanics of simple structures; wood, masonry, concrete construction procedures and techniques. Year 4 & 5 • Landscape Construction 3: Construction document preparation, working drawings, project layout and design. • Design Studio delves into more complex situations, including major design projects supported with complete programming, design and project management components.	actions, attend substantial completion, respond to RFIs, coordinate with contractors, review submittals, prepare drawing revisions and clarification sketches, conduct and document construction-related action, prepare punch lists, attend final completion, conduct warrant review, and collect and analyze performance metrics. **Section 2** • Barrier design would be applicable to the Contextual Analysis (25% of the section) portion of the section. **Section 3** • Site Design is 46% of Section 3 • Barrier Design is addressed in the programing and conceptual design. **Section 4** • Barrier Design is addressed by testing the candidate's depth of knowledge and ability to read, understand, interpret, and/or prepare: existing conditions, demolition plans, layout plans, grading and drainage plans, planting plans, materials plans, sections, elevations, and profiles, construction details, as well as plans for site infrastructure, lighting, site furnishings, signage and wayfinding, traffic control, emergency access, and stormwater management. Furthermore, the section tests the candidate on code requirements, specifications, construction documentation best practices and industry standards for barriers and fall protection.

Element of Practice	Harm to public health, safety, & welfare due to malpractice	Education*	LARE: Ensuring Competence▽
Site Lighting Design	• Improper specification of lighting by landscape architect resulted in electrocution death of homeowner[21] • Inadequate or faulty parking lot lighting can increase crime (with insufficient light) and cause injuries through fire & shock hazards[22]	Year 1 • Mathematics • Design Process & Design Foundations Year 3 • Design studio begins teaching actual land design process, combining the natural systems (landform, water, vegetation, wildlife habitat, soils, climate) with man-built systems (roads, buildings, utilities). Year 4 & 5 • Landscape Construction 3: Construction document preparation, working drawings, project layout and design, theory and principles of lighting design. • Design Studio delves into more complex situations, including major design projects supported with complete programming, design and project management components.	**Section 1** • Site lighting design is minimally covered by testing the candidate's ability to select the proper project team, determine project scope, schedule, and budget, manage the project team, establish quality control procedures, facilitate meetings coordinate work of/with other disciplines, obtain permits, prepare project deliverables, conduct and document construction-related actions, attend substantial completion, respond to RFIs, coordinate with contractors, review submittals, prepare drawing revisions and clarification sketches, conduct and document construction-related action, prepare punch lists, attend final completion, conduct warrant review, and collect and analyze performance metrics. **Section 2** • Site lighting design would be applicable to both the Site Inventory (35% of the section) and Physical Analysis (40% of the section) portions of Section 2, potentially even the Contextual Analysis (25% of the section portion. **Section 3** • Site Design section is 46% of Section 3 and includes understanding how site lighting function and the ability to design a lighting layout. **Section 4** • Site Lighting Design is addressed by testing the candidate's depth of knowledge and ability to read, understand, interpret, and/or prepare: existing conditions, demolition plans, site protection plans, layout plans, grading and drainage plans, planting plans, materials

Element of Practice	Harm to public health, safety, & welfare due to malpractice	Education*	LARE: Ensuring Competence▽
Site lighting design (cont.)			plans, sections, elevations, and profiles, construction details, as well as plans for site infrastructure, irrigation, lighting, site furnishings, signage and wayfinding, traffic control, and emergency access. Furthermore, the section tests the candidate on code requirements, specifications, construction documentation best practices and industry standards for site lighting.
Wetland Issues	• Failure to obtain permits for filling wetlands can result in extensive financial impact for the client[23]	Year 1 • Natural Science elective • Design Process & Design Foundations Year 2 • Ecology: Treating plants, animals, and humans as one integrated whole; problems of environmental quality and resource use. Year 3 • Geology for Civil Engineers: Taught by the Geology department, this course provides the principles of physical and engineering geology; properties of minerals, rocks, and soils; active surface and subsurface processes; applications to the siting, design, construction, operation and maintenance of engineered works and the protection of the environment. • Landscape Construction 1: Aspects of land manipulation and consideration of earth bound elements in landscape development; contours, landform grading design, drainage principles, cut and fill computations, basic hydraulics, drafting. • Design studio begins teaching actual land design process, combining the natural systems (landform, water, vegetation, wildlife habitat, soils,	**<u>Section 1</u>** • Wetland issues are covered by testing the candidate's ability to select the proper project team, determine project scope, schedule, and budget, manage the project team, establish quality control procedures, facilitate meetings coordinate work of/with other disciplines, obtain permits, prepare project deliverables, conduct and document construction-related actions, attend substantial completion, respond to RFIs, coordinate with contractors, review submittals, prepare drawing revisions and clarification sketches, conduct and document construction-related action, prepare punch lists, attend final completion, conduct warrant review, and collect and analyze performance metrics. **<u>Section 2</u>** • Wetlands items/issues would be applicable to the Site Inventory (35% of the section), Physical Analysis (40% of the section), and Contextual Analysis (25% of the section) portions of the section because wetlands are generally protected environmental features and design is typically based on limiting impact to the wetland(s).

Element of Practice	Harm to public health, safety, & welfare due to malpractice	Education*	LARE: Ensuring Competence▽
Wetland Issues (cont.)		climate) with man-built systems (roads, buildings, utilities). Year 4 & 5 • Design Studio delves into more complex situations, including major design projects supported with complete programming, design and project management components. • Sustainable Communities: Principles of sustainability that they are expected to apply in design studio.	**Section 3** • The Master Planning section makes up 45% of Section 3 and includes elements such as analysis of natural site conditions which includes existing wetlands. **Section 4** • Wetlands Issues are addressed by testing the candidate's depth of knowledge and ability to read, understand, interpret, and/or prepare: existing conditions, demolition plans, stormwater pollution prevention plans, site protection plans, layout plans, grading and drainage plans, planting plans, materials plans, sections, elevations, and profiles, construction details, as well as plans for site infrastructure, irrigation, lighting, and stormwater management. Furthermore, the section tests the candidate on code requirements, specifications, construction documentation best practices, and industry standards for constructed wetlands and stormwater control improvements.
Project Management & Supervision	• Developer must sue to recover costs after landscape architect specifies untested technique & fails to supervise installation[24] • Failure to plan with the parameters of municipal zoning & ordinances adds significant cost to projects, including fines levied upon the client	Year 1 • Design Process & Design Foundations Year 2-5 • Design studio begins teaching actual land design process, combining the natural systems (landform, water, vegetation, wildlife habitat, soils, climate) with man-built systems (roads, buildings, utilities). In subsequent years, the studio delves into more complex situations that include grading & drainage issues that include major design project supported with complete programming,	**Section 1** • Project management and supervision are the primary focus of this section and are covered by testing the candidate's ability to select the proper project team, develop contract, negotiate contract, prepare RFPs and RFQs, determine project scope, schedule, and budget, manage the project team, establish quality control procedures, determine common goals and objectives, facilitate meetings coordinate work of/with other disciplines, execute records retention policy, facilitate

Element of Practice	Harm to public health, safety, & welfare due to malpractice	Education*	LARE: Ensuring Competence▽
Project Management & Supervision (cont.)		design and project management components. Year 4 • Landscape Construction 3: Construction document preparation, working drawings, project layout and design. Year 5 • Professional Practice: Procedures, project management, includes proposal preparation, fee structures, forms of practice, project management, and construction documents.	client review and coordination, obtain permits, prepare cost estimates, prepare project deliverables, develop bidding criteria, coordinate with contractors, facilitate pre-construction meeting, document pre-construction existing conditions, review submittals, prepare change orders, conduct and document construction-related actions, attend substantial completion, respond to RFIs, prepare drawing revisions and clarification sketches, conduct and document construction-related action, prepare punch lists, attend final completion, conduct warrant review, attend final completion walkthrough, prepare as-built drawings, conduction project closeout, collect and analyze performance metrics, estimate maintenance and management cost, prepare maintenance operation manual, review maintenance service agreements, and prepare management plan. **Section 2** • All three portions of this section could fall within this element of practice, given that proper supervision and management of the Site Inventory (35% of the section), Physical Analysis (40% of the section), and Contextual Analysis (25% of the section) should always be reviewed by the landscape architect of record prior to finalizing any work product and project directives. **Section 3** • Site Design section makes up 46% of Section 3 and includes understanding how to prepare preliminary quantities and cost estimates as well as an understanding of performance metrics.

Element of Practice	Harm to public health, safety, & welfare due to malpractice	Education*	LARE: Ensuring Competence▽
Project Management & Supervision (cont.)			**Section 4** • Project Management and Supervision is addressed by testing the candidate's depth of knowledge and ability to read, understand, interpret, and/or prepare construction plans and specifications. Furthermore, the section tests the candidate on code requirements, construction documentation best practices and industry standards.
Design of Pedestrian & Vehicular Circulation	• Improperly locating various uses – pedestrian, vehicular, bicycle – can lead to collisions and injury[25]	Design Studio: The studio sequence establishes fundamental skills in pedestrian & vehicular circulation, which is put into practice in the program.	**Section 1** • Design of pedestrian and vehicular circulation are not specifically covered in this section; however, reasonably it is the role of the project manager and project team to properly review and coordinate the implementation of these elements. The content is relevant by testing the candidate's ability determine project scope, schedule, and budget, manage the project team, establish quality control procedures, facilitate meetings coordinate work of/with other disciplines, obtain permits, prepare project deliverables, conduct and document construction-related actions, attend substantial completion, respond to RFIs, coordinate with contractors, review submittals, prepare drawing revisions and clarification sketches, conduct and document construction-related action, prepare punch lists, attend final completion, conduct warrant review, and collect and analyze performance metrics. **Section 2** • Design of pedestrian & vehicular circulation

Element of Practice	Harm to public health, safety, & welfare due to malpractice	Education*	LARE: Ensuring Competence▽
Design of Pedestrian & Vehicular Circulation (cont.)			items/issues would be applicable to the Site Inventory (35% of the section), Physical Analysis (40% of the section), and Contextual Analysis (25% of the section). **Section 3** • The Master Planning section is 45% of Section 3 and includes circulation on a broad scale as it relates to developing master plans. • Site Design is 46% of Section 3 and includes circulation as it relates to conceptual design and design alternatives. **Section 4** • Design of pedestrian and vehicular circulation is addressed by testing the candidate's depth of knowledge and ability to read, understand, interpret, and/or prepare: existing conditions, demolition plans, site protection plans, layout plans, grading and drainage plans, planting plans, materials plans, sections, elevations, and profiles, construction details, as well as plans for site infrastructure, irrigation, lighting, site furnishings, signage and wayfinding, traffic control, and emergency access. Furthermore, the section tests the candidate on code requirements, specifications, construction documentation best practices and industry standards for site improvements including, but not limited to: paving, walls, structures, furnishings, lighting, drainage, and planting.
Site Design	• Many varied factors must be considered when designing a site. Examples of bad design include encroaching into adjacent properties and	The entire curriculum is geared toward site design. Most significantly, site design is a major part of the full studio sequence. Each year, the program builds upon the basic elements of site design and applies them to a wide variety of situations.	**Section 1** • Site design is minimally covered by testing the candidate's ability to determine project scope, schedule, and budget, manage the project team, establish quality control procedures,

Element of Practice	Harm to public health, safety, & welfare due to malpractice	Education*	LARE: Ensuring Competence▽
Site Design (cont.)	cuts/fills over utility easements[26] • Inadvisably choosing a site for a project that has an impact upon wetlands or other environmentally sensitive areas can cause irreversible environmental damage, costly delays to projects, and fines for the client		facilitate meetings coordinate work of/with other disciplines, obtain permits, prepare project deliverables, conduct and document construction-related actions, attend substantial completion, respond to RFIs, coordinate with contractors, review submittals, prepare drawing revisions and clarification sketches, conduct and document construction-related action, prepare punch lists, attend final completion, conduct warrant review, and collect and analyze performance metrics. **Section 2** • Site design items/issues would be applicable to the Site Inventory (35% of the section), Physical Analysis (40% of the section), and Contextual Analysis (25% of the section). **Section 3** • The Master Planning section makes up 45% of section 3 and includes elements such as analysis of natural site conditions and ecosystems, characteristics of fire hazard areas, assessing condition of natural elements, and principles of sustainability. This section also covers site selection and relationships among program elements. • The Site Design Section is 46% of Section 3 and is entirely devoted to site design. This section deals with site planning, including location of elements, integration with natural & built environment, and evaluating & selecting the best alternatives from multiple solutions. **Section 4** • Site Design is addressed by testing the candidate's depth of knowledge and ability to read, understand, interpret, and/or prepare:

Element of Practice	Harm to public health, safety, & welfare due to malpractice	Education*	LARE: Ensuring Competence▽
Site Design (cont.)			existing conditions, soil borings, demolition plans, stormwater pollution prevention plans, site protection plans, layout plans, grading and drainage plans, planting plans, materials plans, sections, elevations, and profiles, construction details, as well as plans for site infrastructure, irrigation, lighting, site furnishings, signage and wayfinding, traffic control, emergency access, and stormwater management. Furthermore, the section tests the candidate on code requirements, specifications, construction documentation best practices and industry standards for site planning.

* Course descriptions taken from the core curriculum of the accredited undergraduate landscape architecture program at Texas A&M (2008)

▽ Section 1-- Project and Construction Management -- 85 scored items & 15 pretest items consisting of multiple-choice and multiple-response questions; 3 hours seat time, 2 ½ hours for exam; Section 2 -- Inventory and Analysis -- 70 scored items & 10 pretest items consisting of multiple-choice and multiple-response, 2 ½ hours seat time, 2 hours for the exam; Section 3 -- Design -- 85 scored items & 15 pretest items consisting of advanced item types, multiple-choice and multiple-response questions; 4 hours seat time, 3 ½ hours for the exam; Section 4 -- Grading, Drainage and Construction Documentation -- 105 scored items & 15 pretest items consisting of advanced item types, multiple-choice and multiple-response questions; 4 ½ hours seat time, 4 hours for the exam

1 Case 12: *Hoskinson v. City of Iowa City*, 621 N.W.2d (Iowa 2001)
2 Case 13: *Ward v. Shoney's, Inc.*, 817 A.2d 799 (Del. Supr. 2003)
3 Case 14: *Aitkenhead v. City & County of San Francisco*, 150 Cal.App.2d 49 (Cal. App. 1957)
4 Case 15: *Springer v. City & County of Denver,* Colo. Ct. App., No. 98CA0545 (May 13, 1999)
5 Case 28: *Wessel v. Erickson Landscaping Co.*, 711 P.2d 250 (Utah 1985)
6 Case 29: *Gladin v. Von Engeln*, 575 P.2d 418 (Colo. 1978)
7 Case 1: Testimony of Ted Ciavonne, owner of Ciavonne & Associates, Inc., a landscape architecture and planning firm, who was an expert witness in this case
8 Case 2: Case presented in the 2001 sunset application by Colorado landscape architects
9 Case 26: *McLendon & Cox v. Roberts*, 398 S.E.2d 579 (Ga. App. 1990)
10 Case 20: *Post Prop. Inc v. Doe*, 495 S.E.2d 573 (Ga. App. 1997)
11 Case 23: *Glass v. Peter Michell Construction, et al, 718 A.2d 78 (Conn. App. 1998)*

[12] Case 7: *The Tampa Tribune* (March 31, 2001); Case 8: *Norman Kelley and Jan Kelley, Ind. & on behalf of the estate of Amanda Kelley, Deceased and A/N/F of Matthew Kelley, a minor v. Lloyd Thomas Hallum, Fairfield Village Community Association, Association Management Inc., The Spencer Company,* Harris County District Ct. 80th, No. 94-46155; Case 10: *Doe v Roe Campground*, Fresno County Super. Ct., confidential docket number (August 2, 1999)
[13] Case 22: *Benton v. City of Oakland City*, 721 N.E.2d 224 (Ind. 1999)
[14] Case 9: *Southeastern Fid. Ins. Co. v. Cashio, Cochran & Assocs., 6231* La. App. 4 Cir. (March 16, 1987); Case 19: *Reno v. Krantz*, Denver County District Ct., No. 96-CV-5429 (December 28, 1999)
[15] Case 1: Testimony of Ted Ciavonne, owner of Ciavonne & Associates, Inc., a landscape architecture and planning firm, who was an expert witness in this case
[16] Case 3: Case presented in the 2001 sunset application by Colorado landscape architects
[17] Case 4: Case presented in the 2001 sunset application by Colorado landscape architects
[18] Case 24: *Foxchase, LLLP et al v. Cliatt*, 562 S.E.2d 221 (Ga. App. 2002)
[19] Case 25: *Erie Insurance Exchange v. Colony Development*, 736 N.E.2d 950 (Ohio App. 2000)
[20] Case 5: *Stanley Wagoner, Indiv. And as next friend of Stephen Earl Wagoner v. City of Dallas*, 192nd Ct., Dallas Co. Ct., No. 86-7738K; Case 6: Testimony of forensic expert in this case; Case 16: *Schager v. Midway Shopping Ctr. Ltd. Partnership*, NY Sup. Ct., No. 107737/96 (June 1, 1999); Case 17: *Eisenpresser v. Staples, Inc.,* NY Sup. Ct. (April 14, 1999); Case 18: *Okosisi v. Dominque Apartments, Ltd.*, Los Angeles County Super. Ct., No. YC 022023 (Dec. 4, 1998)
[21] Case 11: *Batz v. First Fla. Dev., Inc*, Martin County Cir. Ct., 97-667 CA (July 30, 1998)
[22] Case 21: *Doe v. Applewood Apartments* (complete citation not yet available)
[23] Case 27: *Winstead Land Development, et al v. Design Collaborative Architects, P.C.*, Supr. Ct. Conn., No. CV 960071571 (Aug. 12, 1999)
[24] Case 30: *Loup-Miller v. Brauer & Associates*, 572 P.2d 845, 846 (Colo. Ct. App. 1997)
[25] Case 2: Case presented in the 2001 sunset application by Colorado landscape architects
[26] Case 2: Case presented in the 2001 sunset application by Colorado landscape architects

Appendix G

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Appendix H

Preparers and Contributors to the White Paper

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This white paper was prepared by the Virginia Chapter of the American Society of Landscape Architects (**ASLA Virginia**) with support provided by the Potomac Chapter of the American Society of Landscape Architects (**ASLA Potomac**), the American Society of Landscape Architects (**ASLA**), and the Council of Landscape Architectural Registration Boards (**CLARB**).

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This white paper includes, with permission, substantial excerpts of information prepared and published by ASLA, CLARB, and ASLA Virginia.

ASLA Virginia represents landscape architectural professionals that live and work in the Commonwealth of Virginia. The mission of ASLA Virginia is the advancement of knowledge, education, and skills in the art and science of landscape architecture as an instrument of service in public welfare. ASLA Virginia promotes the profession of landscape architecture and advances the practice through advocacy, education, communication, and fellowship.

ASLA Potomac, with a territory including Metropolitan Washington, D.C., has collaborated on this white paper with ASLA Virginia given that ASLA Potomac's membership includes Virginia-licensed landscapes architects and those seeking licensure in Virginia. The mission of ASLA Potomac is to advance the profession of landscape architecture in the eyes of the general public. ASLA Potomac advances the profession on the local level by holding events, meetings, outings and providing information regarding the profession to the local media and schools. The Chapter may also interface with municipal governments regarding local issues that could impact the profession, or the public realm.

Founded in 1899, **ASLA** is the professional association for landscape architects in the United States. The Society's mission is to advance landscape architecture through advocacy, communication, education, and fellowship. Sustainability has been part of ASLA's mission since its founding and is an overarching value that informs all of the Society's programs and operations. ASLA has been a leader in demonstrating the benefits of green infrastructure and resilient development practices through the co-development of the Sustainable Sites Initiative (SITES®) Rating System, and the creation of publicly-accessible sustainable design resources.

CLARB's mission is to protect the public's health, safety, and welfare by establishing and promoting professional licensure standards. CLARB members are the licensure boards across the United States, Canada, the Commonwealth of Puerto Rico, and the Commonwealth of the Northern Mariana Islands. CLARB prepares, administers, and scores the Landscape Architect Registration Examination (LARE) which assesses the ability of prospective licensees to protect the public's health, safety, and welfare. CLARB also manage a professional information system called the CLARB Council Record through which landscape architects document and verify their education, experience, examination, and licensure history. The Record helps reduce barriers to mobility by streamlining the initial and reciprocal licensure processes.

For more information email admin@vaasla.org or visit vaasla.org and asla.org.