June 28, 2023

To: California Seismic Safety Commission

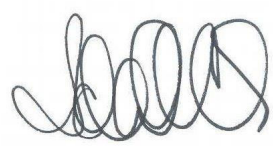
Subject: AB 100 Report – Division of the State Architect

Since 1933, the Division of the State Architect has successfully and efficiently delivered design review and construction oversight of California's K-12 public schools and community colleges in the execution of the Field Act and, since 1986, design review and construction oversight for the state's essential services buildings through the Essential Services Building Seismic Safety Act. Our staff of 300 technical and administrative professionals in four regional offices and headquarters are committed to this mission and take pride in the noble purpose of our work.

Our beginnings as a department were the result of the 1906 San Francisco earthquake, to ensure that public buildings in San Francisco and other cities in this great state would be built with greater oversight. Our authority for the design review and construction oversight of schools was the result of the 1933 Long Beach earthquake, where 120 schools in the Long Beach area were damaged, of which 70 were destroyed. The earthquake occurred around dinnertime, and if students and teachers were in these buildings at the time of the earthquake, the casualties would have been in the thousands. These seismic events gave genesis to the DSA we know today, and as a result of the efforts of dedicated DSA technical professionals over the years, no building offered DSA design review and construction oversight has collapsed because of a seismic event and no loss of life has occurred.

I am proud to submit this report to you that describes in detail DSA's plan review and enforcement authority and our authority for regulatory development related to seismic safety, in addition to the numerous other valued services we provide. Through this work we aim to make California's public schools, community colleges, and essential services buildings safer and resilient with each passing year, offering greater protection to students, teachers, and the general public.

Sincerely,



Ida A. Clair, AIA
State Architect

DSA Report to Seismic Safety Commission July 20, 2023

ABOUT US

The Division of the State Architect (DSA) provides design review and construction oversight for K–12 schools, community colleges, and various other state-owned and state-leased facilities to ensure that they comply with all structural, accessibility, and fire and life safety codes. To promote consistent knowledge and application of the California Building Codes, as well as information for successful plan review and construction of projects under DSA's jurisdiction, DSA offers classes through its DSA Academy.

DSA also develops accessibility, structural safety, and historical building codes and standards utilized in various public and private buildings throughout the state of California. Various groups have been established to work with DSA on these projects.

DSA is also charged with administering certification programs for project inspectors, special inspectors, materials testing laboratories, and certified access specialists.

DSA is headquartered in Sacramento with regional offices in Oakland, Sacramento, Los Angeles, and San Diego.

AUTHORITY OF DSA

Education Code

- Section 17280 - 17316 (Field Act; K–12)
- Section 81130 - 81147 (Field Act; Community Colleges)

Government Code

- Section 4450 (Accessibility)
- Section 4465 - 4470 (Disability Access and Education)
- Section 14963 (Fire and Life Safety)

Health and Safety Code

- Section 16000 - 16023 (Essential Services Buildings)
- Section 18950 - 18961 (State Historical Building Code)

Regulations - Title 24, Parts 1 - 12

- Part 1 - Administrative Code
- Part 2 - Building Code
- Parts 3, 4, 5, 6 - Electrical, Mechanical, Plumbing & Energy Codes
- Part 9 - Fire Code
- Part 11 - CALGreen Code

JURISDICTION OF DSA

K–12 Public Schools and Community Colleges

The Field Act establishes stringent structural safety standards for public schools to withstand earthquakes and other hazards, not only to protect students and staff, but also because schools may serve as emergency shelters for their communities in the event of a disaster. Since the Field Act was enacted in 1933, DSA's review and approval have ensured that there has never been a major structural failure at a public California K–12 school or community college.

State Essential Services Buildings

Essential services buildings provide services to the public after a major disaster. As such, they must have a high level of structural integrity. DSA is charged with enforcement of the Essential Services Building Seismic Safety Act and reviews and approves plans for these state-owned and state-leased facilities.

Other State-Funded Construction

DSA reviews construction plan compliance with accessibility requirements for all state-funded facilities in California, such as California courts, University of California, California State University, and state-owned buildings.

ENFORCEMENT RESPONSIBILITY OF DSA

DSA has responsibility for enforcement in two separate areas of State law:

1. **Access Compliance:** DSA has jurisdiction over access compliance requirements for all buildings in California (including schools) that are publicly-funded in whole or in part by the use of state funds per Government Code Section 4450 through 4461. Plan review of access compliance related features only, is performed for the following entities when public funds are used in construction:
    - Public elementary and secondary Schools (grades K–12)
    - Community colleges
    - All state-owned or state-leased essential services buildings
    - University of California
    - California State University
    - All state-owned State of California property
    - All state-leased State of California property (enforced by DGS/Real Estate Services Division)
    - Certain Charter schools PL 17-01: Charter Schools Enforcement Jurisdiction (PDF)

2. **General California Building Code Enforcement (For Public Schools and Essential Services Buildings Only):** For public schools and State Essential Services Buildings (ESB), DSA has jurisdiction over all aspects of construction (including access compliance), to ensure that plans, specifications, and construction comply with the building code (Title 24 of the California Code of Regulations). Plan review and construction oversight is provided for new construction, alterations, additions, repairs, rehabilitations, and modernizations on the following facilities:
    - Public elementary and secondary schools (grades K–12) - see Education Code, Sections 17280-17317 and 17365-17374.
    - Public Community colleges - see Education Code, Sections 81130-81149.
    - All state-owned or state-leased essential services buildings – see Health and Safety Code, Sections 16000-16023.

1933 LONG BEACH EARTHQUAKE

On March 10, 1933, at 5:55 PM, an earthquake in Long Beach (magnitude estimated at 6.3) destroyed 70 schools and damaged 420 others. 120 people lost their lives in the quake, mostly from falling unreinforced masonry. Several significant state laws arose as a direct result of the Long Beach quake, including:

- **Field Act** – enacted April 10, 1933 (Ed. Code 17280 – 17316 and 81130 – 81147)
    - California's first major earthquake policy.
    - Granted authority DSA for design review and construction oversight of schools.
    - Granted authority to DSA to promulgate rules and regulations as necessary to carry out provisions of the Field Act.
- **Riley Act** – enacted May 26, 1933
    - Required all local governments to have a building department.
    - Required all structures to be designed to withstand a horizontal acceleration of 0.02 times the acceleration due to gravity.
- **Garrison Act** – enacted 1939
    - Required all schools built before 1933 to be upgraded or abandoned for use.
    - As originally enacted, provided for corrective steps a school board must take if examination by an architect or structural engineer found a school building to be unsafe. It also provided that if, after taking the required

steps (generally related to holding elections to provide funds for repairs) the electorate did not authorize the board to sell bonds or increase taxes and if the district had no other funds available to make repairs, the board members were not to be held personally liable for continued use of the unsafe building. No time limit was established.

    - In 1963, the provisions which specifically absolved the board members of personal liability were repealed.

- **Greene Act** – enacted 1967 and 1968; amended the Garrison Act provisions.

    - Set deadline for examination (Jan 1, 1970) of pre-Field Act public school buildings and provided immunity to personal liability for school board members upon initiating action to examine such buildings.

    - Set deadline for abandonment of unsafe buildings (June 30, 1975; was later extended to June 30, 1977, under certain conditions)

IMPACT OF THE FIELD ACT

The Field Act set into place important requirements for California K–12 public schools and community colleges:

- Licensed design professionals must prepare drawings and specifications for proposed construction work.
- Drawings and specifications must be verified for compliance with applicable building codes and approved by DSA before a contract for construction can be awarded.
- The building codes utilized in the design of school buildings contain structural provisions superior to many other types of facilities, with consideration for known seismic activity in California.
- A project owner (school or community college district) must hire a DSA-certified Project Inspector to oversee construction. The inspector selection must be approved by the owner, design professionals and DSA.
- Changes to approved drawings and specifications for DSA-regulated portions of the project shall be submitted and approved by DSA prior to commencement of work.
- At the conclusion of construction, the design professionals, the inspector, and the contractor shall file verified reports with DSA indicating the work has been performed in compliance with the approved plans and specifications.

Since the Field Act was enacted in 1933, DSA's design review and construction oversight has ensured that there has never been a major structural failure nor loss of life during a seismic event at a Field Act-compliant school.

DSA'S PROGRAMS AND PRODUCTS RELEVANT TO SEISMIC SAFETY

- **DSA Academy**

  The public and Division of the State Architect (DSA) staff can register for trainings on school construction plan review for public K–12 schools, community colleges, and essential services buildings; building code; accessibility; and other related topics.

  Since July 30, 2021, DSA Academy courses are now offered through the Cornerstone Learning management System (LMS).

- **Structural Safety Code Development**

  In order to promote safety, DSA collaborates with stakeholders, experts and public entities to develop regulations that govern the construction of public school and state essential services buildings in California. We propose changes to the California Building Standards Code (Title 24), as well as develop and publish interpretations of code and policies and procedures necessary for stakeholder understanding and coordination of enforcement among the DSA regional offices. The building code becomes law when it's formally enacted by the appropriate authority. DSA is one of several state agencies that propose changes to Title 24 through the California Building Standard Commission's (CBSC) rulemaking process. The creation of regulation is directed through law. Regulations govern how the law will be enforced.

- **Structural Safety Design Review**

  One of DSA's primary roles is the structural safety design review (plan review) of public schools and state essential services buildings to ensure that the facilities meet the high standards set in the Field Act and Essential Services Building Seismic Safety Act to withstand earthquakes. Buildings constructed pursuant to these standards are expected to resist forces generated by winds and major earthquakes of the strongest anticipated at the site without catastrophic collapse but may experience some repairable architectural or structural damage. An essential services building shall be capable of providing essential services to the public after a disaster.

- **Construction Oversight**

  After the plans are approved, DSA is notified by the design professional of the start of construction. DSA reviews the qualifications of and approves the proposed project inspector(s) who will inspect the construction. DSA schedules visits by its field staff to report on the construction and performance of the project inspector to verify compliance with the California Building Code. During these construction site visits, the DSA staff work closely with the project inspector to ensure that the intent of the plans and specifications are achieved at the

construction site and that all required approvals are properly administered by the design professionals.

The DSA staff reviews and approves all construction change documents, reviews all inspector and lab reports and makes recommendations regarding the closeout and certification of construction. DSA also has authority to stop construction if it does not meet the code. The staff interacts closely and promptly with the design professional to achieve code compliance and to administer construction certification.

In 2013, DSA implemented significant changes to the Construction Oversight Process. These changes are designed to streamline the DSA construction phase process and to ensure that projects are certified at the completion of construction. Effective June 1, 2013, DSA began utilizing an Inspection Card Process similar to that used by virtually every building department throughout the State.

- **Project Inspector Certification Program**

  All school projects under the jurisdiction of DSA must have a Certified Project Inspector on site. The inspector selection must be approved by the design professionals and DSA prior to commencement of construction. Similarly, project inspectors must be approved for state-owned and state-leased essential services buildings.

  Applicants must complete and submit DSA's project inspector examination application form and justifying qualifications to establish eligibility to take the project inspector exam. Project Inspectors are required to recertify (renew) every four years.

  Project Inspectors are listed on the Certified Project Inspector List. We also produce a self-reported Project Inspector Availability List, which is listed on our website. The availability list is provided as a courtesy by DSA for school districts and project inspectors and is updated on a biweekly basis.

- **Lab Evaluation Acceptance (LEA) Program**

  Laboratories conducting materials testing and special inspection services on school projects must be accepted by the DSA Laboratory Evaluation and Acceptance Program. A list of laboratory facilities that have been evaluated and accepted by DSA to perform services on school projects can be found at Accepted Laboratories on DSA's Tracker website. Laboratory Evaluation and Acceptance Program acceptance is typically valid for four years.

- **Project Certification**

  Project certification is the process that the DSA uses to determine that the constructed project complies with the codes and regulations governing school construction. A project certification is acknowledged by a DSA letter certifying that the building project has been completed in accordance with the requirements as to the safety of design and construction pursuant to the respective statutory requirements. The certification process provides a method to determine the safety of school construction.

  Proof of Project Certification:
  - Copy of DSA certification letter.
  - Copy of DSA history card showing certification.
  - DSA Tracker shows project is certified.

  DSA is unable to approve new proposed projects associated with uncertified construction. DSA IR A-20: *New Projects Associated with Existing Uncertified Projects*, on the DSA Publications webpage, contains further discussion.

  More than 130,000 projects have received DSA certification since May 1933.

- **Safety Assessment Program (SAP)**

  Under Title I, Section 3100 of the California Government Code, all government employees are declared Disaster Service Workers who can be called upon in any emergency. This means that all DSA employees have a responsibility to help in a disaster. Furthermore, DSA technical staff who are eligible (licensed architects and engineers) are required to obtain and maintain Safety Assessment Program (SAP) evaluator certification.

  DSA SAP evaluators assist in safety evaluations of California schools after a disaster. Some of the most recent deployments of DSA SAP evaluators after California earthquakes include Napa (2014); Ridgecrest (2019); and Ferndale (2022). DSA SAP evaluators may also be deployed to provide general assistance to other authorities by performing safety evaluations on the built environment after major earthquakes; some of the most recent instances of this were Alaska (Anchorage, 2018) and Puerto Rico (2019-2020).

LONG TERM GOALS FOR DSA WITH REGARDS TO SEISMIC SAFETY

1. Continue to incorporate latest science and engineering into the building codes to ensure safe performance of schools in seismic events.

2. Continue to produce and maintain interpretation of regulations (IR), bulletins (BU) and other documents to notify and assist design professionals and stakeholders in understanding the special regulations that apply to schools.

3. Continue to develop and maintain training courses via DSA Academy to notify and assist design professionals and stakeholders in understanding the special regulations that apply to schools.

4. Currently, when a proposed project involving an existing school building hits one of the following “triggers”, a rehabilitation (seismic evaluation, and retrofit of deficiencies identified by the evaluation) is mandatory:

    - Project cost exceeds 50% replacement cost of the building.
    - 10% increase in force or 10% reduction in strength or stiffness
    - Change of occupancy

    DSA has convened an Existing Buildings Task Force in order to explore possible adjustments to mandatory rehabilitation triggers to encourage gradual improvements to existing school buildings when projects below the current triggers are performed.

LINKS TO DSA’S WEBSITES PERTINENT TO STRUCTURAL (SEISMIC) SAFETY:

About Us: *https://www.dgs.ca.gov/DSA/About*

DSA Publications: https://www.dgs.ca.gov/DSA/Publications

DSA Academy: *https://www.dgs.ca.gov/DSA/Resources/Page-Content/Resources-List-Folder/DSA-Academy?search=academy*

Structural Safety Code Development: *https://www.dgs.ca.gov/DSA/Resources/Page-Content/Resources-List-Folder/Structural-Safety-Code-Development?search=rulemaking*

Structural Safety Plan Review: *https://www.dgs.ca.gov/DSA/Resources/Page-Content/Resources-List-Folder/Structural-Safety-Plan-Review?search=structural*

Construction Oversight: *https://www.dgs.ca.gov/DSA/Resources/Page-Content/Resources-List-Folder/Construction-Oversight-for-School-Essential-Services-Construction-Projects*

Project Inspector Certification Program: *https://www.dgs.ca.gov/DSA/Services/Page-Content/Division-of-the-State-Architect-Services-List/Copy-of-Apply-and-Maintain-Project-Inspector-Certification*

Lab Evaluation Acceptance Program: *https://www.dgs.ca.gov/DSA/Services/Page-Content/Division-of-the-State-Architect-Services-List/Apply-for-Laboratory-Acceptance-forMaterial-Testing-on-School-Construction-Projects?search=lab%20evaluation*

Project Certification: *https://www.dgs.ca.gov/DSA/Resources/Page-Content/Resources-List-Folder/Project-Certification-for-School-Essential-Services-Construction-Projects*