Applying the LAPELS, NSPE and ASCE Codes of Ethics to Construction Site Safety

Louisiana Civil Engineering Conference and Show

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“Who is this guy?”

- BS Civil Engineering, Bucknell University
- 5 years active duty, US Navy Civil Engineer Corps officer
- MS and PhD from MIT
- 5 years with publicly traded homebuilder and forensic engineering firm
- Three start ups (registered PE in 12 states)
- 18 years civil engineering professor, Associate Dean at Bucknell University
- ~7 years Dean, College of Engineering, University of Toledo
- 2024 Toledo region NSPE Engineer of the Year
- Married 39 years, 2 grown children, 1.9 grandchildren

To download this presentation (PDF)

- *Go to tmichaeltoole.com and scroll down to "Select Presentations and Webinars"*

Overview

- Why engineering codes of ethics are needed
- Flyover of the LAPELS, NSPE, and ASCE Codes of Ethics
- What do these codes say about sustainability and equity?
- Applying these codes of ethics to construction site safety

Why are there Engineering Codes of Ethics?

- Philosophical assumptions
  - Engineers have special responsibilities in society
  - All humans are at least partially self-interested
  - U.S. engineers work in a capitalistic system and often for a for-profit employer
- Reality
  - Successful business development is critical to your firm's self interest!
  - No one wants to expose their firm to litigation!
- Codes of Ethics help balance individual and organizational self-interests with what is best for society and the profession

Let’s Look at Three Engineering Codes of Ethics

- Louisiana Professional Engineering and Land Surveying “Board Rules” on professional conduct
- National Society of Professional Engineers (NSPE) Code of Ethics
- American Society of Civil Engineers (ASCE) Code of Ethics

LAPELS

- https://lapels.com/LawsRules.html
- Louisiana Administrative Code, Title 46 Professional and Occupational Standards, Part LXI Professional Engineers and Land Surveyors, Chapter 25

Table of Contents

Title 46

PROFESSIONAL AND OCCUPATIONAL STANDARDS

Part LXI. Professional Engineers and Land Surveyors

LAPELS

- https://lapels.com/LawsRules.html
- Louisiana Administrative Code, Title 46, Professional and Occupational Standards, Part LXI Professional Engineers and Land Surveyors, Chapter 25
- Last revised May 2025
- Focus areas are subset of areas commonly addressed in codes of ethics
  - Life, health/safety, welfare
  - Perform only when competent
  - Conflicts of interest
  - Objective and Truthful

§2501. Scope; Knowledge; Definition of Licensee

A. In order to safeguard life, health and property, to promote the public welfare, and to establish and maintain a high standard of integrity and practice, the following rules of professional conduct shall be binding on every licensee. These rules of professional conduct deal primarily with the relationship between licensees and the public and should not be construed as a substitute for codes of ethics of the various professional and technical societies.

B. All licensees are charged with having knowledge of the licensure law and the rules of the board and shall be deemed to be familiar with their provisions and to understand them.

Life
Health
Safety
Welfare

§2503. Licensees

A. Licensees shall hold paramount the life, health, property and welfare of the public in the performance of their professional duties.

B. Licensees shall at all times recognize that their primary obligation is to protect the life, health, property, and welfare of the public. If their professional judgment is overruled by nontechnical authority, they will clearly point

C. Licensees shall approve and seal only those documents which are safe for public life, health, property, and welfare, which are complete and accurate, which are in conformity with accepted engineering and land surveying standards or practice, and which conform to applicable laws and ordinances.

Perform only when Competent

§2505. Services

A. Licensees shall perform services only in the area of their competence.

B. Licensees shall undertake assignments only when qualified by education or experience in the specific technical fields of engineering or land surveying involved.

C. Licensees shall not affix their signatures or seals to any documents dealing with subject matters in which they lack competence, nor to any such document not prepared by them or under their responsible charge. Responsible charge requires a licensee to have client contact, provide internal and external financial control, oversee training of subordinates, and exercise control and supervision over all job requirements to include research, planning, design, field supervision and work product review. A licensee shall not

Conflicts of Interest

§2507. Conflicts of Interest

A. Licensees shall further act in professional matters for each employer or client as faithful agents or trustees and shall avoid conflicts of interest.

B. Licensees shall disclose all known or potential conflicts of interest to their employers or clients by promptly informing them of any business association, interest, or other circumstances which could influence their professional judgment or the quality of their professional services.

D. Licensees shall not solicit or accept, directly or indirectly, benefits of any substantial nature or significant gratuity, from any supplier of materials or equipment, or from contractors, their agents, servants or employees or from any other party dealing with the client or employer of the licensee in connection with any project on which the licensee is performing or has contracted to perform professional services.

Objective and Truthful (2503)

E. Licensees shall be objective and truthful in all professional reports, statements or testimony. Licensees shall include all relevant and pertinent information in such reports, statements or testimony.

G. Licensees shall issue no statements, criticisms, or arguments on engineering or land surveying matters connected with public policy which are inspired or paid for by an interested party or parties, unless the licensee has prefaced the comment by explicitly identifying the licensee's name, by disclosing the identities of any party or parties on

H. Licensees shall not attempt to injure, maliciously or falsely, directly or indirectly, the professional reputation, prospects, practice or employment of another licensee, nor indiscriminately criticize another licensee's work in public.

Objective and Truthful (2509)

§2509. Improper Solicitation

A. Licensees shall avoid improper solicitation of professional employment or services.

B. Licensees shall not falsify or permit misrepresentation or exaggeration of:

1. the licensee's or any associate's academic or professional qualifications;

2. the licensee's degree of responsibility in or for the subject matter of prior work; or

3. pertinent facts concerning employers, employees, associates or joint ventures, of the licensee's or his/her firm's past accomplishments.

Objective and Truthful (2511)

§2511. Conduct of Advertising

A. Licensees shall not make exaggerated, misleading, deceptive or false statements or claims about professional qualifications, experience or performance in brochures, correspondence, listings, websites, or other public communications.

B. The prohibitions listed in Subsection A include, but are not limited to:

1. the use of statements containing a material misrepresentation of fact;

2. omitting a material fact necessary to keep the statement from being misleading;

3. the use of statements intended or likely to create an unjustified expectation; and

National Society of Professional Engineers

- www.nspe.org/career-growth/ethics/code-ethics
- Last revised July 2019 *(version on LA Engineering Society webpage is 2007)*
- Structure
  - Preamble
  - 6 Fundamental Canons
  - 5 Rules of Practice (elaboration on first 5 Fundamental Canons)
  - 9 Professional Obligations

NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

Code of Ethics for Engineers

Preamble

Engineering is an important and learned profession. As members of this profession, engineers are expected to exhibit the highest standards of honesty and integrity. Engineering has a direct and vital impact on the quality of life for all people. Accordingly, the services provided by engineers require honesty, impartiality, fairness, and equity, and must be dedicated to the protection of the public health, safety, and welfare. Engineers must perform under a standard of professional behavior that requires adherence to the highest principles of ethical conduct.

I. Fundamental Canons

Engineers, in the fulfillment of their professional duties, shall:

1. Hold paramount the safety, health, and welfare of the public.
2. Perform services only in areas of their competence.
3. Issue public statements only in an objective and truthful manner.
4. Act for each employer or client as faithful agents or trustees.
5. Avoid deceptive acts.
6. Conduct themselves honorably, responsibly, ethically, and lawfully so as to enhance the honor, reputation, and usefulness of the profession.

II. Rules of Practice

1. **Engineers shall hold paramount the safety, health, and welfare of the public.**
   a. If engineers' judgment is overruled under circumstances that endanger life or property, they shall notify their employer or client and such other authority as may be appropriate.
   b. Engineers shall approve only those engineering documents that are in conformity with applicable standards.
   c. Engineers shall not reveal facts, data, or information without the prior consent of the client or employer except as authorized or required by law or this Code.
   d. Engineers shall not permit the use of their name or associate in business ventures with any person or firm that they believe is engaged in fraudulent or dishonest enterprise.
   e. Engineers shall not aid or abet the unlawful practice of engineering by a person or firm.
   f. Engineers having knowledge of any alleged violation of this Code shall report thereon to appropriate professional bodies and, when relevant, also to public authorities, and cooperate with the proper authorities in furnishing such information or assistance as may be required.

2. **Engineers shall perform services only in the areas of their competence.**
   a. Engineers shall undertake assignments only when qualified by education or experience in the specific technical fields involved.
   b. Engineers shall not affix their signatures to any plans or documents dealing with subject matter in which they lack competence, nor to any plan or document not prepared under their direction and control.
   c. Engineers may accept assignments and assume responsibility for coordination of an entire project and sign and seal the engineering documents for the entire project, provided that each technical segment is signed and sealed only by the qualified engineers who prepared the segment.

3. **Engineers shall issue public statements only in an objective and truthful manner.**
   a. Engineers shall be objective and truthful in professional reports, statements, or testimony. They shall include all relevant and pertinent information in such reports, statements, or testimony, which should bear the date indicating when it was current.
   b. Engineers may express publicly technical opinions that are founded upon knowledge of the facts and competence in the subject matter.
   c. Engineers shall issue no statements, criticisms, or arguments on technical matters that are inspired or paid for by interested parties, unless they have prefaced their comments by explicitly identifying the interested parties on whose behalf they are speaking, and by revealing the existence of any interest the engineers may have in the matters.

4. **Engineers shall act for each employer or client as faithful agents or trustees.**
   a. Engineers shall disclose all known or potential conflicts of interest that could influence or appear to influence their judgment or the quality of their services.
   b. Engineers shall not accept compensation, financial or otherwise, from more than one party for services on the same project, or for services pertaining to the same project, unless the circumstances are fully disclosed and agreed to by all interested parties.
   c. Engineers shall not solicit or accept financial or other valuable consideration, directly or indirectly, from outside agents in connection with the work for which they are responsible.
   d. Engineers in public service as members, advisors, or employees of a governmental or quasi-governmental body or department shall not participate in decisions with respect to services solicited or provided by them or their organizations in private or public engineering practice.
   e. Engineers shall not solicit or accept a contract from a governmental body on which a principal or officer of their organization serves as a member.

5. **Engineers shall avoid deceptive acts.**
   a. Engineers shall not falsify their qualifications or permit misrepresentation of their or their associates' qualifications. They shall not misrepresent or exaggerate their responsibility in or for the subject matter of prior assignments. Brochures or other presentations incident to the solicitation of employment shall not misrepresent pertinent facts concerning employers, employees, associates, joint ventures, or past accomplishments.
   b. Engineers shall not offer, give, solicit, or receive, either directly or indirectly, any contribution to influence the award of a contract by public authority, or which may be reasonably construed by the public as having the effect or intent of influencing the awarding of a contract. They shall not offer any gift or other valuable consideration in order to secure work. They shall not pay a commission, percentage, or brokerage fee in order to secure work, except to a bona fide employee or bona fide established commercial or marketing agencies retained by them.

III. Professional Obligations

1. **Engineers shall be guided in all their relations by the highest standards of honesty and integrity.**
   a. Engineers shall acknowledge their errors and shall not distort or alter the facts.
   b. Engineers shall advise their clients or employers when they believe a project will not be successful.
   c. Engineers shall not accept outside employment to the detriment of their regular work or interest. Before accepting any outside engineering employment, they will notify their employers.
   d. Engineers shall not attempt to attract an engineer from another employer by false or misleading pretenses.
   e. Engineers shall not promote their own interest at the expense of the dignity and integrity of the profession.
   f. Engineers shall treat all persons with dignity, respect, fairness, and without discrimination.

2. **Engineers shall at all times strive to serve the public interest.**
   a. Engineers are encouraged to participate in civic affairs; career guidance for youths; and work for the advancement of the safety, health, and well-being of their community.
   b. Engineers shall not complete, sign, or seal plans and/or specifications that are not in conformity with applicable engineering standards. If the client or employer insists on such unprofessional conduct, they shall notify the proper authorities and withdraw from further service on the project.
   c. Engineers are encouraged to extend public knowledge and appreciation of engineering and its achievements.
   d. Engineers are encouraged to adhere to the principles of sustainable development[1] in order to protect the environment for future generations.
   e. Engineers shall continue their professional development throughout their careers and should keep current in their specialty fields by engaging in professional practice, participating in continuing education courses, reading in the technical literature, and attending professional meetings and seminar.

NSPE NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

3. Engineers shall avoid all conduct or practice that deceives the public.

a. Engineers shall avoid the use of statements containing a material misrepresentation of fact or omitting a material fact.
b. Consistent with the foregoing, engineers may advertise for recruitment of personnel.
c. Consistent with the foregoing, engineers may prepare articles for the lay or technical press, but such articles shall not imply credit to the author for work performed by others.

4. Engineers shall not disclose, without consent, confidential information concerning the business affairs or technical processes of any present or former client or employer, or public body on which they serve.

a. Engineers shall not, without the consent of all interested parties, promote or arrange for new employment or practice in connection with a specific project for which the engineer has gained particular and specialized knowledge.
b. Engineers shall not, without the consent of all interested parties, participate in or represent an adversary interest in connection with a specific project or proceeding in which the engineer has gained particular specialized knowledge on behalf of a former client or employer.

5. Engineers shall not be influenced in their professional duties by conflicting interests.

a. Engineers shall not accept financial or other considerations, including free engineering designs, from material or equipment suppliers for specifying their product.
b. Engineers shall not accept commissions or allowances, directly or indirectly, from contractors or other parties dealing with clients or employers of the engineer in connection with work for which the engineer is responsible.

6. Engineers shall not attempt to obtain employment or advancement or professional engagements by untruthfully criticizing other engineers, or by other improper or questionable methods.

a. Engineers shall not request, propose, or accept a commission on a contingent basis under circumstances in which their judgment may be compromised.
b. Engineers in salaried positions shall accept part-time engineering work only to the extent consistent with policies of the employer and in accordance with ethical considerations.
c. Engineers shall not, without consent, use equipment, supplies, laboratory, or office facilities of an employer to carry on outside private practice.

7. Engineers shall not attempt to injure, maliciously or falsely, directly or indirectly, the professional reputation, prospects, practice, or employment of other engineers. Engineers who believe others are guilty of unethical or illegal practice shall present such information to the proper authority for action.

a. Engineers in private practice shall not review the work of another engineer for the same client, except with the knowledge of such engineer, or unless the connection of such engineer with the work has been terminated.
b. Engineers in governmental, industrial, or educational employ are entitled to review and evaluate the work of other engineers when so required by their employment duties.
c. Engineers in sales or industrial employ are entitled to make engineering comparisons of represented products with products of other suppliers.

8. Engineers shall accept personal responsibility for their professional activities, provided, however, that engineers may seek indemnification for services arising out of their practice for other than gross negligence, where the engineer's interests cannot otherwise be protected.

a. Engineers shall conform with state registration laws in the practice of engineering.
b. Engineers shall not use association with a nonengineer, a corporation, or partnership as a "cloak" for unethical acts.

9. Engineers shall give credit for engineering work to those to whom credit is due, and will recognize the proprietary interests of others.

a. Engineers shall, whenever possible, name the person or persons who may be individually responsible for designs, inventions, writings, or other accomplishments.
b. Engineers using designs supplied by a client recognize that the designs remain the property of the client and may not be duplicated by the engineer for others without express permission.
c. Engineers, before undertaking work for others in connection with which the engineer may make improvements, plans, designs, inventions, or other records that may justify copyrights or patents, should enter into a positive agreement regarding ownership.
d. Engineers' designs, data, records, and notes referring exclusively to an employer's work are the employer's property. The employer should indemnify the engineer for use of the information for any purpose other than the original purpose.

Footnote 1 "Sustainable development" is the challenge of meeting human needs for natural resources, industrial products, energy, food, transportation, shelter, and effective waste management while conserving and protecting environmental quality and the natural resource base essential for future development.

"By order of the United States District Court for the District of Columbia, former Section 11(c) of the NSPE Code of Ethics prohibiting competitive bidding, and all policy statements, opinions, rulings or other guidelines interpreting its scope, have been rescinded as unlawfully interfering with the legal right of engineers, protected under the antitrust laws, to provide price information to prospective clients; accordingly, nothing contained in the NSPE Code of Ethics, policy statements, opinions, rulings or other guidelines prohibits the submission of price quotations or competitive bids for engineering services at any time or in any amount."

Statement by NSPE Executive Committee

In order to correct misunderstandings which have been indicated in some instances since the issuance of the Supreme Court decision and the entry of the Final Judgment, it is noted that in its decision of April 25, 1978, the Supreme Court of the United States declared: "The Sherman Act does not require competitive bidding."

It is further noted that as made clear in the Supreme Court decision:

1. Engineers and firms may individually refuse to bid for engineering services.
2. Clients are not required to seek bids for engineering services.
3. Federal, state, and local laws governing procedures to procure engineering services are not affected, and remain in full force and effect.
4. State societies and local chapters are free to actively and aggressively seek legislation for professional selection and negotiation procedures by public agencies.
5. State registration board rules of professional conduct, including rules prohibiting competitive bidding for engineering services, are not affected and remain in full force and effect. State registration boards with authority to adopt rules of professional conduct may adopt rules governing procedures to obtain engineering services.
6. As noted by the Supreme Court, "nothing in the judgment prevents NSPE and its members from attempting to influence governmental action . . ."

Note: In regard to the question of application of the Code to corporations vis-a-vis real persons, business form or type should not negate nor influence conformance of individuals to the Code. The Code deals with professional services, which services must be performed by real persons. Real persons in turn establish and implement policies within business structures. The Code is clearly written to apply to the Engineer, and it is incumbent on members of NSPE to endeavor to live up to its provisions. This applies to all pertinent sections of the Code.

NSPE

NSPE Focus Areas

I. Fundamental Canons

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d. Engineers shall not permit the use of their name or associate in business ventures with any person or firm that they believe is engaged in fraudulent or dishonest enterprise.
e. Engineers shall not aid or abet the unlawful practice of engineering by a person or firm.
f. Engineers having knowledge of any alleged violation of this Code shall report thereon to appropriate professional bodies and, when relevant, also to public authorities, and cooperate with the proper authorities in furnishing such information or assistance as may be required.

2. Engineers shall perform services only in the areas of their competence.

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4. Engineers shall act for each employer or client as faithful agents or trustees.

a. Engineers shall disclose all known or potential conflicts of interest that could influence or appear to influence their judgment or the quality of their services.
b. Engineers shall not accept compensation, financial or otherwise, from more than one party for services on the same project, or for services pertaining to the same project, unless the circumstances are fully disclosed and agreed to by all interested parties.
c. Engineers shall not solicit or accept financial or other valuable consideration, directly or indirectly, from outside agents in connection with the work for which they are responsible.
d. Engineers in public service as members, advisors, or employees of a governmental or quasi-governmental body or department shall not participate in decisions with respect to services solicited or provided by them or their organizations in private or public engineering practice.
e. Engineers shall not solicit or accept a contract from a governmental body on which a principal or officer of their organization serves as a member.

5. Engineers shall avoid deceptive acts.

a. Engineers shall not falsify their qualifications or permit misrepresentation of their or their associates' qualifications. They shall not misrepresent or exaggerate their responsibility in or for the subject matter of prior assignments. Brochures or other presentations incident

III. Professional Obligations

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   a. Engineers shall acknowledge their errors and shall not distort or alter the facts.
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   d. Engineers shall not attempt to attract an engineer from another employer by false or misleading pretenses.
   e. Engineers shall not promote their own interest at the expense of the dignity and integrity of the profession.
   f. Engineers shall treat all persons with dignity, respect, fairness, and without discrimination.

2. **Engineers shall at all times strive to serve the public interest.**
   a. Engineers are encouraged to participate in civic affairs; career guidance for youths; and work for the advancement of the safety, health, and well-being of their community.
   b. Engineers shall not complete, sign, or seal plans and/or specifications that are not in conformity with applicable

American Society of Civil Engineers

- www.asce.org/-/media/asce-images-and-files/career-and-growth/ethics/documents/asce-code-ethics.pdf
- Last revised Oct 2020
- Structure: Preamble + sets of duties owed to five stakeholder groups
  - Society
  - Natural and Built Environment
  - Profession
  - Clients and Employers
  - Peers
- Focus areas: NSPE Code + Society, Environment, Equity

1. SOCIETY

Engineers:

a. first and foremost, protect the health, safety, and welfare of the public;
b. enhance the quality of life for humanity;
c. express professional opinions truthfully and only when founded on adequate knowledge and honest conviction;
d. have zero tolerance for bribery, fraud, and corruption in all forms, and report violations to the proper authorities;
e. endeavor to be of service in civic affairs;
f. treat all persons with respect, dignity, and fairness, and reject all forms of discrimination and harassment;
g. acknowledge the diverse historical, social, and cultural needs of the community, and incorporate these considerations in their work;
h. consider the capabilities, limitations, and implications of current and emerging technologies when part of their work; and
i. report misconduct to the appropriate authorities where necessary to protect the health, safety, and welfare of the public.

2. NATURAL AND BUILT ENVIRONMENT

Engineers:

a. adhere to the principles of sustainable development;
b. consider and balance societal, environmental, and economic impacts, along with opportunities for improvement, in their work;
c. mitigate adverse societal, environmental, and economic effects; and
d. use resources wisely while minimizing resource depletion.

3. PROFESSION

Engineers:

a. uphold the honor, integrity, and dignity of the profession;
b. practice engineering in compliance with all legal requirements in the jurisdiction of practice;
c. represent their professional qualifications and experience truthfully;
d. reject practices of unfair competition;
e. promote mentorship and knowledge-sharing equitably with current and future engineers;
f. educate the public on the role of civil engineering in society; and
g. continue professional development to enhance their technical and non-technical competencies.

4. CLIENTS AND EMPLOYERS

Engineers:

a. act as faithful agents of their clients and employers with integrity and professionalism;
b. make clear to clients and employers any real, potential, or perceived conflicts of interest;
c. communicate in a timely manner to clients and employers any risks and limitations related to their work;
d. present clearly and promptly the consequences to clients and employers if their engineering judgment is overruled where health, safety, and welfare of the public may be endangered;
e. keep clients' and employers' identified proprietary information confidential;
f. perform services only in areas of their competence; and
g. approve, sign, or seal only work products that have been prepared or reviewed by them or under their responsible charge.

5. PEERS

Engineers:

a. only take credit for professional work they have personally completed;
b. provide attribution for the work of others;
c. foster health and safety in the workplace;
d. promote and exhibit inclusive, equitable, and ethical behavior in all engagements with colleagues;
e. act with honesty and fairness on collaborative work efforts;
f. encourage and enable the education and development of other engineers and prospective members of the profession;
g. supervise equitably and respectfully;
h. comment only in a professional manner on the work, professional reputation, and personal character of other engineers; and
i. report violations of the Code of Ethics to the American Society of Civil Engineers.

Overview

- Why engineering codes of ethics are needed
- Flyover of the LAPELS, NSPE, and ASCE Codes of Ethics
- **What do these codes say about sustainability and equity?**
- Applying these codes of ethics to construction site safety

What are our obligations for ensuring our projects are sustainable?

- LAPELS Board Rules do not contain the words “sustainable,” “sustainability” or “environment.”

What are our obligations for ensuring our projects are sustainable?

2. Engineers shall at all times strive to serve the public interest.

a. Engineers are encouraged to participate in civic affairs; career guidance for youths; and work for the advancement of the safety, health, and well-being of their community.

b. Engineers shall not complete, sign, or seal plans and/or specifications that are not in conformity with applicable engineering standards. If the client or employer insists on such unprofessional conduct, they shall notify the proper authorities and withdraw from further service on the project.

c. Engineers are encouraged to extend public knowledge and appreciation of engineering and its achievements.

d. Engineers are encouraged to adhere to the principles of sustainable development[1] in order to protect the environment for future generations.

Footnote 1 "Sustainable development" is the challenge of meeting human needs for natural resources, industrial products, energy, food, transportation, shelter, and effective waste management while conserving and protecting environmental quality and the natural resource base essential for future development.

What are our obligations for ensuring our projects are sustainable?

2. NATURAL AND BUILT ENVIRONMENT

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a. adhere to the principles of sustainable development;
b. consider and balance societal, environmental, and economic impacts, along with opportunities for improvement, in their work;
c. mitigate adverse societal, environmental, and economic effects; and
d. use resources wisely while minimizing resource depletion.

What are our obligations for ensuring our actions towards others are equitable and fair?

- LAPELS Board Rules do not contain the words “equity,” “equitable,” or “fair,” or “respect.”

What are our obligations for ensuring our actions towards others are equitable and fair?

Preamble

Engineering is an important and learned profession. As members of this profession, engineers are expected to exhibit the highest standards of honesty and integrity. Engineering has a direct and vital impact on the quality of life for all people. Accordingly, the services provided by engineers require honesty, impartiality, fairness, and equity, and must be dedicated to the protection of the public health, safety, and welfare. Engineers must perform under a standard of professional behavior that requires adherence to the highest principles of ethical conduct.

9. Engineers shall give credit for engineering work to those to whom credit is due, and will recognize the proprietary interests of others.

a. Engineers shall, whenever possible, name the person or persons who may be individually responsible for designs, inventions, writings, or other accomplishments.

What are our obligations for ensuring our actions towards others are equitable and fair?

1. SOCIETY

Engineers:

a. first and foremost, protect the health, safety, and welfare of the public;
b. enhance the quality of life for humanity;
c. express professional opinions truthfully and only when founded on adequate knowledge and honest conviction;
d. have zero tolerance for bribery, fraud, and corruption in all forms, and report violations to the proper authorities;
e. endeavor to be of service in civic affairs;
f. treat all persons with respect, dignity, and fairness, and reject all forms of discrimination and harassment;
g. acknowledge the diverse historical, social, and cultural needs of the community, and incorporate these considerations in their work;

What are our obligations for ensuring our actions towards others are equitable and fair?

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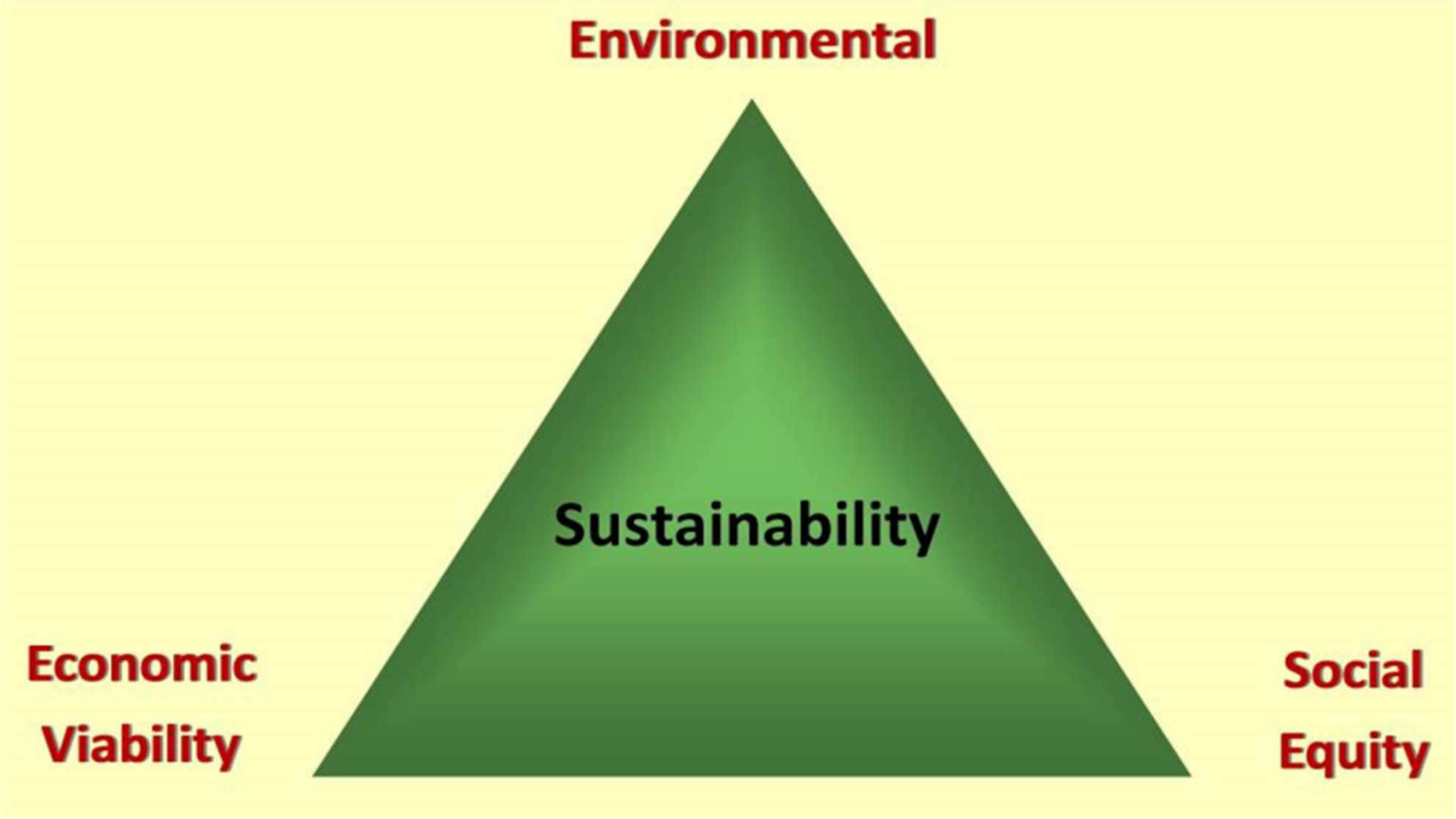
d. use resources wisely while minimizing resource depletion.

Sustainability is Not Just The Environment



Sustainable Development

Capital projects that treat fairly people who are not at the table during design and planning

Further reading:
Toole, T. M. and G. Carpenter (2013). "Prevention through Design as a Path Towards Social Sustainability." *ASCE Journal of Architectural Engineering* 19(3):169-173.

Social Sustainability Issues

- How will we convince all stakeholders that our project will treat fairly people affected by the project who are not at the table during the concept development, design and construction planning?
  - Building occupants
  - Nearby residents
  - Local politicians and regulators
  - Our employees
  - Manufacturing workers
  - Construction workers
  - Maintenance workers

Annual Construction Accidents in U.S.

- Nearly 200,000 serious injuries
- 1,000+ deaths

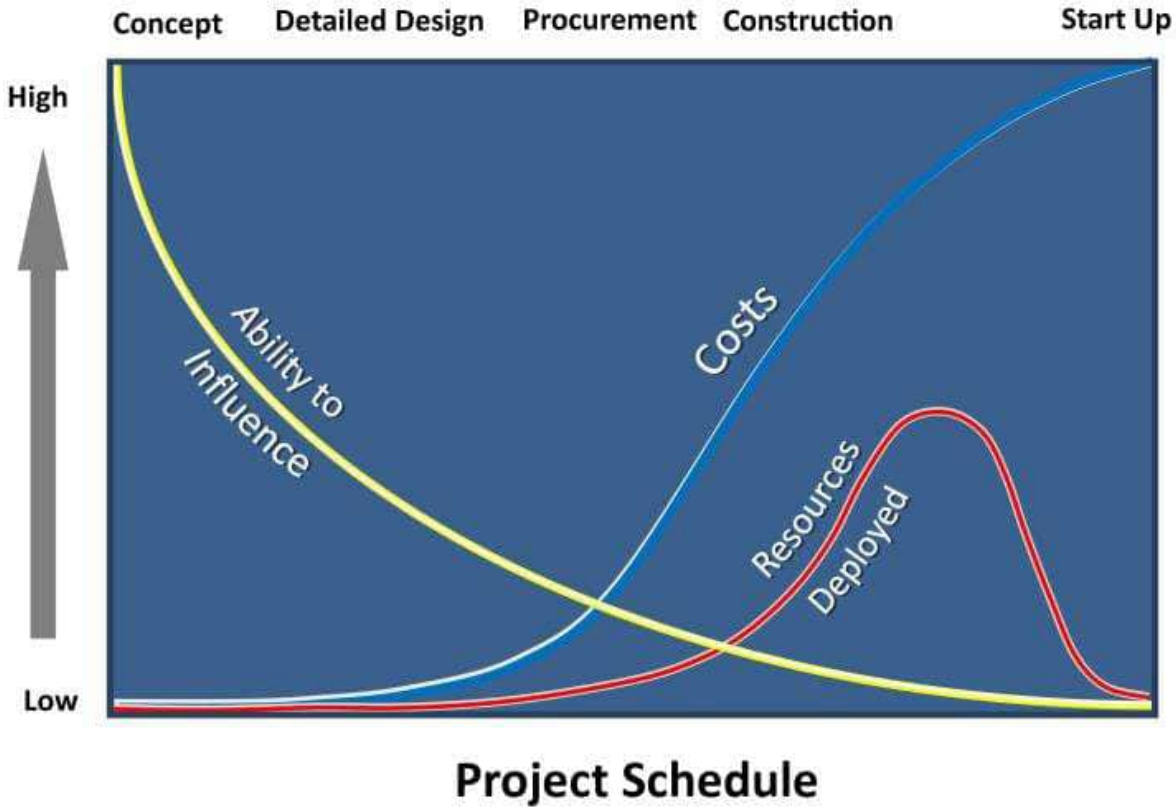
Design-safety Links

- **22%** of 226 injuries that occurred from 2000-2002 in Oregon, WA, and CA[1]
- **42%** of 224 fatalities in US between 1990-2003[1]
- **60%** of fatal accidents resulted in part from decisions made before site work began[2]
- **63%** of all fatalities and injuries could be attributed to design decisions or lack of planning[3]

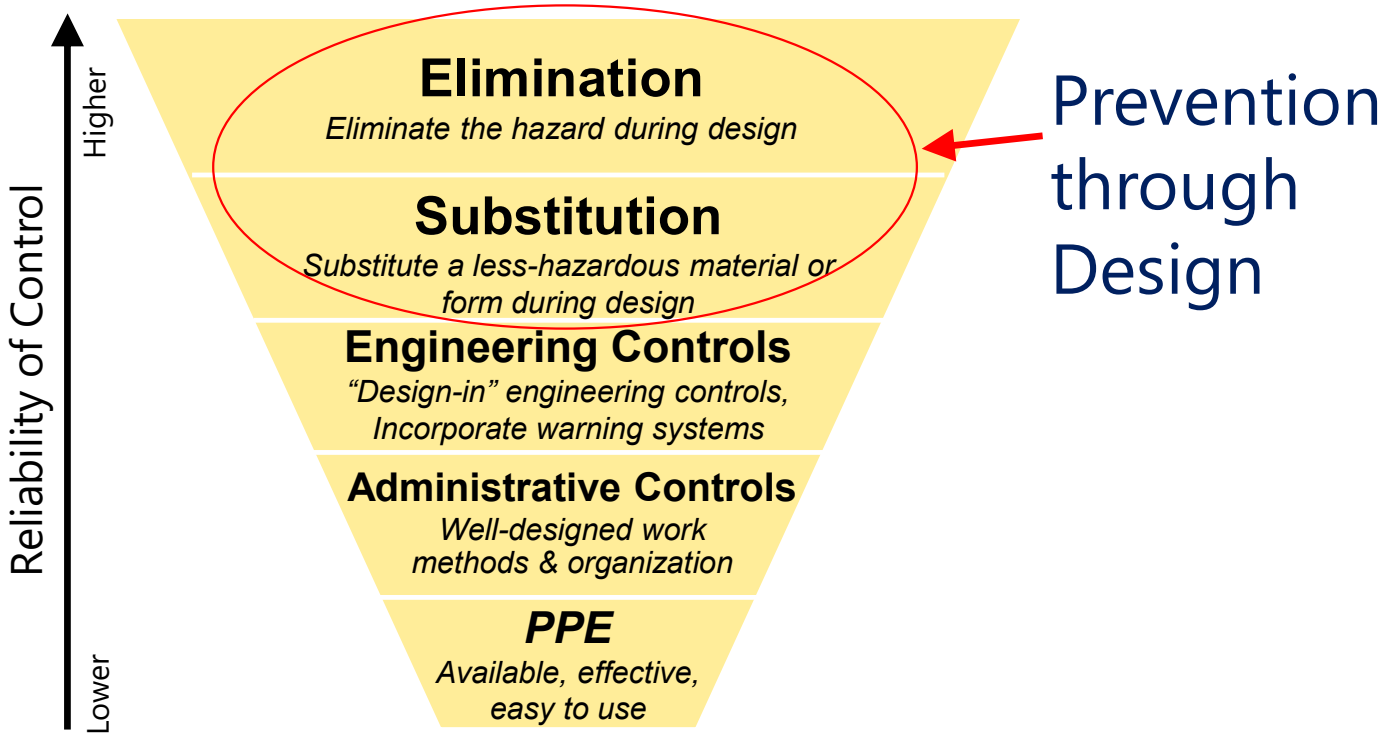
[1] Behm, M., "Linking Construction Fatalities to the Design for Construction Safety Concept" (2005)
[2] European Foundation for the Improvement of Living and Working Conditions
[3] NSW WorkCover, *CHAIR Safety in Design Tool*, 2001

Design has Major Leverage

- Ability to influence key project goals is greatest early in the project schedule during planning and design (Szymberski, 1997)



Hierarchy of Controls



Prevention through Design (PtD)

"Addressing occupational safety and health needs in the design process to prevent or minimize the work-related hazards and risks associated with the construction, manufacture, use, maintenance, and disposal of facilities, materials, and equipment."

(http://www.cdc.gov/niosh/topics/ptd/)

Prevention through Design

= Design for Safety

= Safety by Design

PtD in Construction is…

- Explicitly considering construction and maintenance safety in the design of a project.
- Being conscious of and valuing the safety of construction and maintenance workers when performing design tasks.
- Making design decisions based in part on a design element's inherent safety risk to construction and maintenance workers.

“Safety Constructability and Maintainability”

True Story From NIOSH F.A.C.E Report

- Groundwater monitoring well plan called for a well to be installed under overhead power lines.
- Drill rig operator was electrocuted by arc flash from power line to rig
- Had design engineer known about proximity of power line and possibility of arc flash, the well location could have been shifted out of hazard zone

Example: Roofs and Perimeters

Skylights with built-in fall prevention

39”+ high parapet walls do not need additional fall protection

Examples: Prefabrication

www.ultimateengineering.com

Bridge Trusses

Concrete Wall Panels

test.jedinstvo.com

Pre-engineered buildings

Concrete Segmented Bridge

Prefabrication Addresses all aspects of Sustainability

- Prefabricated construction almost always saves money and time over “stick-built.”
- Prefab is inherently safer because work is shifted from dangerous work environments to engineered work environments and processes.
  - at height
  - in trenches
  - in confined spaces
  - exposed to weather (wind, water, ice, mud, lightning)
- Prefabricated construction has
  - lower construction waste
  - lower embodied energy
  - lower embodied greenhouse gases

Economic Benefits of PtD

- Reduced site hazards
  - **Fewer worker injuries and fatalities**
- Reduced workers' compensation premiums
- Increased quality
- Increased productivity and fewer delays due to accidents so project deadlines are met

PtD In Construction is NOT…

- Having the designer dictate Means and Methods
- Making the designer responsible for accidents
- Assuming designers know more about construction and maintenance safety than they actually do

Ethical Questions Regarding PtD

- What are our obligations for construction site safety
  - of our own employees?
  - of other employees on our projects?
- Are our own employees and construction workers on our projects less deserving than “the public”?
- What are our obligations for designing out a hazard?
- Don’t our duties include minimizing all risks (especially to people) that we have control over?

What are Our Obligations for Considering Construction Site Safety on Our Projects?

§2503. Licensees

A. Licensees shall hold paramount the life, health, property and welfare of the public in the performance of their professional duties.

What are Our Obligations for Considering Construction Site Safety on Our Projects?

III. Professional Obligations

1. **Engineers shall be guided in all their relations by the highest standards of honesty and integrity.**
   a. Engineers shall acknowledge their errors and shall not distort or alter the facts.
   b. Engineers shall advise their clients or employers when they believe a project will not be successful.
   c. Engineers shall not accept outside employment to the detriment of their regular work or interest. Before accepting any outside engineering employment, they will notify their employers.
   d. Engineers shall not attempt to attract an engineer from another employer by false or misleading pretenses.
   e. Engineers shall not promote their own interest at the expense of the dignity and integrity of the profession.
   f. Engineers shall treat all persons with dignity, respect, fairness, and without discrimination.

What are Our Obligations For Considering Construction Site Safety on Our Projects?

PREAMBLE

Members of The American Society of Civil Engineers conduct themselves with integrity and professionalism, and above all else protect and advance the health, safety, and welfare of the public through the practice of Civil Engineering.

Engineers govern their professional careers on the following fundamental principles:

- create safe, resilient, and sustainable infrastructure;
- treat all persons with respect, dignity, and fairness in a manner that fosters equitable participation without regard to personal identity;
- consider the current and anticipated needs of society; and
- utilize their knowledge and skills to enhance the quality of life for humanity.

What are Our Obligations For Considering Construction Site Safety on Our Projects?

1. SOCIETY

Engineers:

a. first and foremost, protect the health, safety, and welfare of the public;
b. enhance the quality of life for humanity;
c. express professional opinions truthfully and only when founded on adequate knowledge and honest conviction;
d. have zero tolerance for bribery, fraud, and corruption in all forms, and report violations to the proper authorities;
e. endeavor to be of service in civic affairs;
f. treat all persons with respect, dignity, and fairness, and reject all forms of discrimination and harassment;
g. acknowledge the diverse historical, social, and cultural needs of the community, and incorporate these considerations in their work;
h. consider the capabilities, limitations, and implications of current and emerging technologies when part of their work; and
i. report misconduct to the appropriate authorities where necessary to protect the health, safety, and welfare of the public.

What are Our Obligations For Considering Construction Site Safety on Our Projects?

5. PEERS

Engineers:

a. only take credit for professional work they have personally completed;
b. provide attribution for the work of others;
c. foster health and safety in the workplace;
d. promote and exhibit inclusive, equitable, and ethical behavior in all engagements with colleagues;
e. act with honesty and fairness on collaborative work efforts;

PtD is Gaining Momentum

- Required in UK, Europe for since 1995
- Required in Australia, S. Africa, Singapore
- OSHA DfCS Workgroup since 2005
- NIOSH PtD Workshops and Funding
- ANSI Standard and Technical Report
- Adoption primarily in the process/industrial construction sector
- LEED Pilot Credit

ASCE-Const. Institute Site Safety Policy (PS350)

- "The American Society of Civil Engineers (ASCE) believes site safety is paramount during construction and requires attention and commitment from all parties involved during project planning, design, construction, and commissioning. All organizations and individuals involved in a project can influence safety on the project and therefore their involvement in addressing safety is important."

- "Design Professionals have the responsibility for considering the safety of those who are affected by the design, and for recognizing that site safety and constructability are important considerations when preparing construction plans and specifications."

https://www.asce.org/advocacy/policy-statements/ps350---construction-site-safety

Summary

- Codes of Ethics are intended to help us balance individual and organizational self-interests with the interests of society and our profession.
- The LAPELS Board Rules delineate important binding guidelines, but the NSPE and ASCE codes of ethics have additional elements that should guide our action towards others, including regarding social sustainability and equity.
- Engineering codes of ethics prioritize the health, safety and welfare of people. The ASCE Codes of Ethics and Policy Statement 350 require designers to consider the safety of construction workers. Prevention through Design (aka Design for Safety) is an emerging process for reducing unnecessary hazards on construction sites.
- No one ever said that doing the right thing is easy, might not cost you a bit more money, won't result in exposure to risks you would prefer to avoid, won't require change management……

THANK YOU TO LAPELS LEADERS FOR THIS OPPORTUNITY.

BEST WISHES FOR YOUR CONTINUED SUCCESSFUL AND ETHICAL CAREERS!

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learn about PtD: designforconstructionsafety.org