DISSERTATION

COMMERCIAL CONSTRUCTION ETHICAL DECISION MAKING: AUTHENTIC CASE STUDIES

Submitted by

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ABSTRACT

COMMERCIAL CONSTRUCTION ETHICAL DECISION MAKING: AUTHENTIC CASE STUDIES

This study was developed from 30 years of experiences in commercial construction. In addition to 20 case studies on ethical decision making, perspectives of instructors who taught at American Council of Construction Educators (ACCE) accredited Construction Management (CM) programs were included. These perspectives were considered to improve effectiveness.

Literature found on the topic was minimal with most from government press releases. A Qualtrics survey was sent to 996 CM instructors with a potential sample size of 961 where 78 responded (8.12%). Case study effectiveness, the role and techniques used, as well as themes in literature were analyzed. Quantitative and qualitative data contributed to the development and refinement of 20 authentic case studies.

Over 95% of instructors perceived it their role to teach ethical decision making; strongly agreed (45.59%), agreed (50.00%), neutral (2.94%), disagreed (1.47%), and none strongly disagreed. Instructors perceived construction as having unique pressures varied; Yes (67.65%), No (26.47%), with 5.88% did not know. When asked if ethical transgressions were systemic; Yes (38.24%), No (45.59%), and 14.71% did not know. Did instructors perceive an "everybody does it" attitude; Yes (42.65%), No (47.06%), and 10.29% did not know. When asked if authentic case studies were readily available; strongly agreed (4.48%), agreed (23.88%), neutral (28.36%), disagreed (35.82%), and strongly disagreed (7.45%).

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CHAPTER 1: INTRODUCTION

> I want employees to ask themselves whether they are willing to have any contemplated act appear the next day on the front page of their local paper - to be read by their spouses, children and friends - with the reporting done by an informed and critical reporter.
> Warren Buffet (Belludi, 2009, p. 1)

Ethical decision making in commercial construction is a topic seldom discussed and rarely researched. Ethical dilemmas introduce choices construction managers face. These present situational challenges involving truth, moral courage, and potentially difficult circumstances. Authentic case studies of experiences may be used to inform construction management (CM) students and contribute to their decision-making skills. The goal of this study was to write 20 effective case studies.

Decisions by construction managers should be ethical. Mahatma (Great Soul) Gandhi was quoted "never depart from the strictest facts and in dealing with difficult questions that have arisen" (1962, p. 59). The Dali Lama identified ethical discipline and wholesome conduct as ingredients for a happy life for individuals (1999, p. 161). His holiness described a duty to care for one another to make responsible decisions leading to universal happiness. Making people feel good about doing good helped people live free of guilt and stress (Lloyd & Kidder, 1997, p. 147). If ethical decision making was the means, Gandhi stated means were everything (1962, p. 173).

"There is a lack of focus in the construction field regarding the integration of social impact awareness and ethical behavior into professional practice" (Sinha et al., 2004, p. 1). The *National Business Ethics Survey of the U.S. Construction Industry* indicated "observed misconduct is more commonplace in the construction industry than other corporations across the U.S." (ERC, 2013, p. 15). Construction firms paid a price for crimes and misdemeanors of

employees and business associates. Employees at a rate of 55% reported morale was impacted by economic crime where business relationships and reputation of organizations were damaged (Shaw, 2010). Fails Management Institute (FMI) and the Construction Management Association of America (CMAA) indicated 84% of owners, architects, construction managers, contractors, and subcontractors experienced, encountered, or observed industry-related unethical acts or decisions in the prior year. Respondents felt the industry was "tainted" at 61%, felt pressure to make unethical decisions , and 34% experienced unethical acts many times (FMI, 2010, p. 1).

Undergraduate case study instruction in ethics was effective (Clarkeburn, 2002; Dean & Beggs, 2008; El-Zein et al., 2007; Huschle, 2012; McQueeney, 2006; Murphy, 2004; Nguyen et al., 2008; Park et al., 2012; Siller et al., 2009; Sims & Sims, 1991; Sinha et al., 2004; Trevino & McCabe, 1994). However, "In general, modern educational systems neglect discussion of ethical matters" (Lama, 1999, p. 182). Effective case studies on ethical decision making dilemmas could provide CM instructors with tools where students learn about their own processes.

Statement of Research Problem

Ethical decision-making challenges exist in commercial construction. Dr. Barbara Jackson's dissertation *The Perceptions of Experienced Construction Practitioners Regarding Ethical Transgressions in the Construction Industry* was ground breaking. "Although little has been written on the topic of ethics in construction, they are by no means a new issue" (Jackson, 2000, p. 2). Acknowledging an "everybody does it" attitude, some viewed unethical decision making as just being good business (Jackson, 2000, p. 13). The ERC survey restated this "everybody does it" attitude (2013). *Engineering News Record (ENR)* included "The defense in every case is we were just trying to stay in business" (Staff, 2005, p. 30). More currently from the *New York Observer:*

> We have identified an industry-wide corrupt practice involving the payment of bribes and kickbacks that ultimately results in increased costs to the public and negatively impacts the quality of materials and the integrity of the work performed, said Robert E. Van Etten, the inspector general of the Port Authority of NY & NJ (Velsey, 2013, p. 12).

This study asked instructors of familiarity with certain ethical themes found in literature, such as "everybody does it".

The issue of ethics in construction should not be taken lightly (Jackson, 1998, p. 208). The author's alma mater recently completed construction of a new $220,000,000 on-campus football stadium. Having been in business since 1954, the large CM organization received praise for a job well done. Two years later the same company settled bid-rigging claims with the City of Denver for $1,300,000 in fines and penalties including a moratorium on bidding city projects until March 2021, among others (Murray, 2020). Ethical improprieties resulted in financial losses, damage to public image, potential to lose future work, and severe penalties to individuals. Collateral damage to morale across organizations led to employees being disengaged and turnover (Shaw, 2010). Dr. Jackson found the main ethical transgression as being bidding improprieties in 2000. In 2022, has there been any progress made?

Significance

Case studies were utilized in many professions. Society relies on business people, doctors, lawyers, teachers, engineers, construction managers, and other professions. Ethics education was critically important to support the good of society and capitalism in business (Swanson, 2004, p. 52). Medical case studies helped to save lives, ethically competent physicians were taught dilemmas shaping their moral world, and how to respond (Hattab, 2004). As physicians considered patients' health paramount, civil engineers were responsible for public safety and welfare (Loui, 2005, p. 386; Starrett et al., 2017, p. 10). Construction managers could also benefit from authentic case studies.

Civil engineering was the closest field to CM addressing the topic. Engineers were regarded as having professional responsibility and expected to achieve highest standards of honesty and integrity (Loui, 2005, p. 386; Siller et al., 2009, p. 103; Sinha et al., 2004, p. 2). It was vital to promote ethical development in engineering students (Finelli et al., 2012, p. 486). Likewise individual decisions in construction had consequences. It is important for managers to realize impacts decisions had on industry and society as a whole (Byrne, 2012, p. 2; Jackson, 1998, p. 207). Due to lack of information in CM, civil engineering references were included here.

Case studies assisted engineering students to understand how decisions at work impacted the world (Finelli et al., 2012, p. 486). Case studies were among varied methods such as workshops, group discussions, and lectures promoting ethical development across curriculum (Finelli et al., 2012). Discipline-specific case studies and industrial scenarios have helped elevate relevance of ethics education in engineering (Alpay, 2013). "Case studies are used to demonstrate problems confronted in the construction industry. These case studies highlight issues and point toward valid resolutions with the aid of the proposed ethical decision-making framework" (Sinha et al., 2007, p. 296). There was a lack of case studies to inform readers and more were needed (Sinha et al., 2007, p. 292).

Purpose Statement

Case studies inform students and instructors of ethical dilemmas occurring on projects and in construction offices. The purpose of this study was to create 20 authentic case studies that were effective. A survey of CM instructors informed and refined case studies that students, faculty, and industry professionals could use emphasizing importance of individual decision making.

Research Questions

The following research questions were addressed from perspectives of CM instructors in accredited American Council for Construction Education (ACCE) CM programs.

1. How do instructors perceive their role and/or responsibility of educating undergraduate students on ethical decision making in commercial construction?

2. How do instructors perceive ethical decision-making content of undergraduate CM program at their institution?

3. Do instructors use case studies to teach? Do they use them to teach ethical decision making? If so, how are they being used?

4. Are there differences among instructors using case studies based on years of teaching?

5. What criteria do instructors identify for selection of effective, different, and topical case studies?

Definition of Terms

The following terms were included in this paper, presented in three categories including ethics, construction, and learning.

Ethics Category

Accountability: Obligation or willingness to accept responsibility for actions.

Autonomy: The right to choose.

Beneficence: To do good, to be proactive, and to contribute to the welfare of the client (Beauchamp & Childress, 2012).

Benevolence: Kindness toward others; desire to promote the happiness and prosperity of employees (Johnson, 2015).

Code of conduct: A set of rules about good and bad behavior for companies.

Code of ethics: A set of rules about good and bad behavior for professional/trade associations. A list of principles, values, commitments, and affirmations by which engineers agree to govern themselves (Starrett et al., 2017).

Collusion: A secret agreement or cooperation among stakeholders especially for an illegal or deceitful purpose.

Courage: Overcoming fear (or other obstacles) to do right.

Deontological ethics: Theory of decisions made based on duty (Johnson, 2015).

Duty: An obligatory task.

Ethical sensitivity: Recognition of ethical problems (Johnson, 2015).

Ethical transgression: Infringement or violation of a law, command, or duty involving ethics.

Fidelity: Trustworthy, keeps promises.

Integrity: Adherence to a code of conduct; honesty; sincerity; candor (Johnson, 2015).

Justice: Evenhanded treatment of employees; impartiality; unbiased rewards and punishments (Johnson, 2015), being fair.

Maxim: States what you are about to do and why you are about to do it (Shafer-Landau, 2010).

Moral decision: A conscious conflict between lines of action and a strong emotional component (Kohlberg, 1981, p. 183).

Moral imagination: Sensitive to ethical dilemmas and can detach themselves from the immediate situation in order to see bigger picture (Johnson, 2015).

Moral motivation: Decision making among competing values (Anderson & Davies, 2000).

Morality: Centrally concerned with protecting well being, fairness, justice, respect for others, virtue, responsibility, rights, liberties, social cooperation, praise, and blame (Shafer-Landau, 2010).

Nonrational: Not based in reason.

Nonmaleficence: Above all to do no harm (Beauchamp & Childress, 2012).

Pragmatism: A practical approach to problems and affairs.

Rational: Based in reason.
Respect: Treatment of employees with esteem and value; demonstration of consideration and concern (Johnson, 2015).

Trust: Confidence in character and truthfulness of organization and its representatives by members and outsiders (Johnson, 2015).

Unethical acts: Not morally acceptable.

Values: What one holds dear.

Whistleblower: An individual who discloses unauthorized information usually concerning alleged wrongdoing (McQueeney, 2006, p. 165).

Construction Category

Architect: Designer of a project responsible for aesthetic aspects. On many projects the mechanical, electrical, and plumbing design team works under an architect contract.

Bid: Price for scope of work is submitted by a contractor and/or subcontractor interested in completing the work. In most instances these are competitive and the lowest responsible bidder is awarded a scope of work.

Bid rigging: Practice of bid organizer and/or bidders colluding to determine who will get certain projects so all participants plan to gain in long run. The loser is the client/owner as pricing is no longer competitive, but fixed (Parson, 2005, p. 3).

Bid shopping: Practice of general contractor divulging solicited pricing of proposals to other bidding subcontractors as leverage to encourage contractors to lower their prices (Parson, 2005, p. 3).

Change order: Written authorization provided to a contractor and/or subcontractor who approves a deviation (change in scope) from original plans, specifications, or other contract documents, as well as an increase/decrease in cost. With proper signatures, this is considered a legal document.

Claim: (1) Contractor request for additional compensation or an extension of time pursuant to contract terms. (2) Request to be paid for cost of damages when an insured loss occurs.

Construction professional: Executive, project manager, purchasing manager, engineer, or superintendent. This is usually the entity responsible for overseeing construction or being part of team building the project. This role can be independent if hired directly by stakeholder. This role can be a member of general contractor team.

False claim: An illegitimate request.

Front-end loading: A method of listing increased dollar amounts of billing items at beginning of the schedule of work to promote positive cash flow.
General contractor: Entity responsible for building project.

Owner: Creator of a project responsible for funding who will be utilizing it.

Program manager: An entity has overall management of conceptual, pre-construction, and post-construction phases of project (ERC, 2013). A program manager oversees multiple contracts on project.

Stakeholders: The owner (client), architects, design engineers, construction professionals/managers, general contractors, subcontractors (including vendors and suppliers).

Subcontractors: Contractors and vendors who provide a specific scope of work to general contractor and/or construction management firm.

Learning Category

Case study: A particular instance of a story/scenario used or analyzed to illustrate a thesis or principle. For purposes of this paper descriptions of authentic scenarios used as a teaching tool for students to better understand their own decision making.

Dilemma: A situation in which there were good reasons to take different courses of action (Kitchener, 1984).

Experiential learning: Learning from doing.

Delimitations

Commercial construction in the United States was the focus, not residential. The time frame was spring 2021 to collect data from instructors of American Council for Construction Education (ACCE) accredited institutions. CM instructors were asked to provide their perspectives of ethical decision making and use of case studies. In addition, they provided detailed qualitative feedback for two authored case studies with the goal of improving effectiveness and inform development of 20 that followed.

Assumptions

Students have knowledge of the construction process including potential ethical dilemmas. Case studies promote awareness and discussion among students and faculty and are a productive method of informing. CM programs should include case studies and instructors have a genuine interest in improving industry with regard to ethical decision making.

Writer's Perspective

My world view is construction managers and owner representatives have fiduciary duties to fulfill contractual obligations. Organizations deserve to be paid fairly for services provided.

An owner has the right to compensate a contractor as appropriate if in line with the organization charter. Actual experiences included in case studies inform students and educators alike of authentic ethical dilemmas.

Having been employed in commercial construction for 30 years holding positions of construction laborer, field and office engineer, assistant and superintendent, assistant and project manager, estimator, purchasing agent (contract writer), program manager, and owners' representative, I respect the industry and have a genuine concern for it. My career has spanned both government (public) and non-government (private) projects throughout the United States, and overseas. My past included owning a CM consulting company overseeing large projects for an Ivy League university. Managing projects valued from $100,000 to $100,000,000 each with a total volume in billions of dollars for my career, I have been individually accountable for $100,000,000s in billings, quality, and schedule performance. While working at very large, large, mid-size, and small construction organizations nationally and internationally, it has been my experience some companies follow stringent procedures, while others do not.

There is personal bias acknowledged as even though ethical decisions are important, I have experienced impacts of unethical ones. Dr. Jackson noted it was important to witness "first hand ethical dilemmas that face those who work in the construction industry" (2000, p. 12). One gains different perspective learning from a text book versus being involved in decisions, dilemmas, or ethical transgressions. Some decisions were wrong regardless if a transgression was valued at $3,400 or $340,000; both damage organizations and people.

Although it is an individual who made an unethical decision, organization members chose to support or denounce it. Even with a code of conduct, it has been my experience with

clear-cut standards, individuals still made unethical decisions. Some do not provide any direct benefit to those making them, as this perplexing theme was detailed below.

> Despite the third firm's reduced market share and its status as an unwitting victim in the scheme, authorities are surprised to hear the project manager contend that he acted in his company's best interests. They can find no evidence that the manager received any personal benefit in exchange for this participation, and the manager maintains that his actions were intended to help sustain a business that had been buckling under pressures of overcommitment and poor resource management (Hoke, 2014, p. 46).

Upon completion of the qualifying exam for my PhD on a Friday morning, I walked through the building of my undergraduate CM coursework 25 years earlier. As students rushed through hallways to classes, thoughts of positive impacts authentic case studies could have went through my mind. On my first project as field engineer for a mid-sized regional organization, my supervisor told me: "You learn just as much on a project not managed well as you do on one managed well". One learns more on a project not run well, upon reflection there is much value in experiencing impacts of poor decisions made and the repercussions.

Improvements are needed in ethical decision making in construction. In November of 2016, I had a discussion with a construction professional who had been an accountant for a Fortune 500 construction company for 30 years. As we discussed ethics to improve industry, he replied "Construction companies want to make money" and they don't care about ethics. The following year in November of 2017, having said the same to a 21-year old university student whose family owns a subcontracting company. He began laughing and replied there are so many construction companies that "don't do what they are supposed to".

It was not always about money; issues involved pursuit of projects, the environment, safety, and other factors. In a graduate course in 2016, upon informing a new cost estimating teaching assistant experienced in home building of my dissertation topic, he replied he was not aware of any issues with regard to ethics in construction. In an advising session in 2018, I had a

conversation with an assistant professor who taught undergraduate cost estimating while finishing his dissertation. I asked him if he taught ethics related coursework and/or utilized case studies to do so, he replied he did neither.

It is important to explore perspectives educators hold. I have concern for potential bias of both industry and construction educators when reading this document. Over the course of exploring and discussing ethics in construction, the topic was seldom discussed, especially with regard to unethical acts occurring. Some who reported experience "the shoot the messenger" phenomenon. The decision by actors may not be labeled at issue, rather why did the individual choose to expose?

Integrity was described as a moral virtue defined as wholeness or completeness (Johnson, 2015). Integrity was all of the following values: love, compassion, kindness, caring, honesty, truth-telling, fairness, equity, justice, responsibility, accountability, sense of respect, tolerance of diversity, willingness to appreciate other people, prudence, humility, hope, discernment (Anderson & Davies, 2000; Beauchamp & Childress, 2012; Lloyd & Kidder, 1997), and consideration. Open to critique, feedback, and identification of weaknesses to improve I have learned attainment of wisdom develops openness toward continuous improvement. As knowledge is pursued and my career progresses, I realize problems are complex and not all solutions have precedent (Kuhn, 2012, p. 47).

CHAPTER 2: LITERATURE REVIEW

Ethics was an area of study of ideas about what is good and bad behavior: a branch of philosophy pertaining to what was morally right or wrong (Kitchener & Anderson, 2011, p. 2). There was minimal literature on the subject in construction (Jackson, 2000). A 1998 study was a first look at a topic not previously addressed (Jackson, p. 208). This literature review focused on two areas: effectiveness/use of case studies in undergraduate instruction, and ethical decision making in construction. See Appendix A; *Literature Review Methods* as defined by author.

Limited literature included a dissertation written in 2000, a 2013 survey specific to non-residential construction by the Ethics Resource Center (ERC), one book, and few peer-reviewed articles. Dr. Jackson wrote her dissertation *The Perceptions of Experienced Construction Practitioners Regarding Ethical Transgressions in the Construction Industry* in 2000. *The National Business Ethics Survey of the U.S. Construction Industry's* purpose was to "establish a baseline for the state of ethics within the construction industry" (ERC, 2013, p. vii). *Professional Ethics for the Construction Industry* (Mirsky & Schaufelberger, 2015) included instruction methods, prevalence, value, and identified a lack of available authentic case studies. Other sources included government publications, print articles, and peer-reviewed studies.

The author included a content listing of 110 articles in Appendix B; *Fraud in the Commercial Construction Industry - Government and Other Publications (January 1, 2005 - April 30, 2016).*

Ethics and Morals Defined

> Ethics is a branch of philosophy that addresses questions of how people ought to act toward each other, that pronounces judgments of value about actions (e.g., whether someone ought to be praised or blamed for those actions), and that develops rules of

> ethical justifications (e.g., how we can justify holding one set of values over another) (Kitchener & Anderson, 2011, p. 2).

Ethics is a broad subject involving morals. "Ethical behavior should be demanded in all aspects of organizational life" (Gilley et al., 2008, p. 194). To understand ethics one must understand morals, described "as specific standards of right and wrong" (Johnson, 2015, p. xx; Rollin, 2006). It was sometimes customary to use moral and ethical theories synonymously (Monteverde, 2014, p. 388). Morals hold a religious connotation suggesting virtue or righteousness while ethics was pertinent to decisions and judgments in professional settings (Anderson & Davies, 2000, p. 718). Morals were associated with individuals while ethics involve organizations.

Dr. Sharon Anderson described principle ethics as being a justification for choices; following rules. Focused on common ground moral principles of autonomy, beneficence, nonmaleficence, and justice (Beauchamp & Childress, 2012; Kitchener, 1984), these addressed the question of what will I do? Virtue ethics was based on issues of character, motivation, emotion, and ideals. These addressed the questions of who will I be? Who am I as a morally sensitive professional (personal communication, July 11, 2016)? Judgment dictated people viewed problems and decisions differently (Rittel & Webber, 1973, p. 164).

Theories

A brief overview of ethical theories follows which include descriptive, normative, applied, virtue, deontological, utilitarianism, egoism, consequentialism, and principle. Some instructors considered philosophical theories on ethics not very interesting to teach (Maxwell et al., 2016, p. 143).

Kitchener and Anderson described three ethical theories in 2011. Descriptive ethics was study of moral values as they existed. Normative ethics was an attempt to identify moral values

people ought to hold. Applied ethics was study and evaluation of moral beliefs and actions within a given professional setting.

Mitcham and Duvall identified the following three theories as Agent, Action, and Results (AAR) (2000). Virtue ethics (Agent) were based in human nature and character; an individual being virtuous (Johnson, 2015). An act was morally right because a person of character would have done the same (Shafer-Landau, 2010). The premise was good people (those of high moral character) made good moral choices (Shafer-Landau, 2010). The character of those individuals would be considered in determining standing. Wisdom, courage, temperance, and justice were traits of virtue (Kang et al., 2012, p. 557).

Deontological ethics (Action) were based on rules; an individual made decisions based on duty (Johnson, 2015), and obligation (Kang et al., 2012). Another rule-based approach was justice as fairness (Johnson, 2015), but who decided what was fair and just? Competing values resulted in dilemmas (Lloyd & Kidder, 1997, p. 148). Utilitarianism was to do greatest good for greatest number of people (Johnson, 2015).

Ethical egoism was a moral theory describing what an individual was required and forbidden to do. Individuals had no duty to others, only to improve their own well-being as best they could (Shafer-Landau, 2010).

Consequentialism was identified as the dominant theory in construction. Moral decisions depended on expected results, cost-benefit analysis (Kang et al., 2012, p. 551), and calculated rationality.

Monteverde preferred principle over aforementioned ethical theories in practical applications (2014, p. 397). He identified an approach based in pragmatism fostering moral

imagination as effectively solving authentic dilemmas. Ethical theories were "playgrounds" for students to have opened their minds and became morally resilient (Monteverde, 2014, p. 397).

Immanuel Kant described the categorical imperative imploring rational actions to do things whether we wanted to or not (Shafer-Landau, 2010, p. 168). Individual intention was basis for judging actions as being right or wrong, not a result (Shafer-Landau, 2010). The Kantian perspective involved benevolence defined as steady commitment to do good for others (Beauchamp & Childress, 2012; Shafer-Landau, 2010), morals guided human behavior.

Kitchener and Anderson explained morals sometimes dictated decisions and were made absent self-interest. Moral imagination included ability to have sensitivity to issues. Moral disengagement was when we looked the other way. This may begin with little decisions which became larger. At some point moral disengagement may completely counter the view of what was right and just (Kitchener & Anderson, 2011).

Blanchard and Peale noted in 1988 "There is no right way to do a wrong thing" (p. 19), and "there is no pillow as soft as a clear conscience" (p. 25). They defined five principles of ethical powers for organizations (Blanchard & Peale, 1988, p. 125):

1. Purpose – Mission comes from the top and is guided by values, hopes, and vision.
2. Pride – In ourselves and the organization, resist temptations to behave unethically.
3. Patience – Values held balance between obtaining results and how to achieve.
4. Persistence – Actions are consistent with our purpose.
5. Perspective – Determine path and how we are going to get there.

In construction, maxims of contract law, societal values, professional practice, and employer obligations merge. The legal domain included laws, standards, regulations, contract

requirements, and policies. The behavior domain included codes of conduct, societal and personal values, and obligations to employers (Sinha et al., 2007, p. 296).

Moral Evaluation Models

The process of evaluating moral dilemmas was important to understand decision making. Models included a sequence of questions where a decision maker reviewed the situation completely and attempted to follow a rational path. The following five models for ethical decision making provided a map for individuals to stay on path.

In 1984, Dr. James Rest defined the following for leaders to evaluate moral behavior when they made ethical decisions (p. 19). These included:

1. Moral sensitivity to recognize issues at hand.
2. Moral judgment to make a correct and intelligent judgment.
3. Moral motivation to act.
4. Moral character to maintain your morals.

Rest agreed with Socrates in that ethics can be taught (1986). Individuals experienced dramatic changes in their 20s and 30s in problem-solving skills linked to perceptions of society and role (Rest, 1984). There was a positive correlation between the number of years of college influencing moral perceptions, judgments, behavior, and decision making (Rest, 1986).

Nash's model helped surfaced ethical concerns that may had normally remained hidden, identified moral problems, clarified gaps between values and performance, and explored alternatives (Johnson, 2015, p. 210).

1. Have you accurately defined the problem?
2. Have you considered the problem from all points of view?
3. How did we get here?

4. To whom and what are you loyal to as a member of an organization?
5. What is your intention in making this decision?
6. How does this intention compare with the likely outcome?
7. Whom could your decision injure?
8. Can you engage affected parties about the problem prior to making a decision?
9. Are you confident the decision is best for long term, as it may seem for short term?
10. Could you disclose your decision to anyone and feel good about it?
11. What is the symbolic potential of your action; if understood or misunderstood?
12. Under what conditions would you allow exceptions to your stand?

Kidder's model helped to bring order to ethical issues (Johnson, 2015, p. 202).

1. Recognize there is a problem.
2. Determine actor.
3. Gather relevant facts.
4. Test for right versus wrong issues.
5. Test for right versus right issues.
6. Apply ethical standards and perspectives.
7. Look for a third way.
8. Make decision.
9. Revisit and reflect on decision.

Anderson and Davies' model was directed at community college leadership and can be used to inform decision making (2000).

1. Identification of the ethical dilemma.
2. Gathering all of the facts, self-monitoring, and consulting.

3. Asking important questions.

4. Crediting alternative courses of action.

5. Evaluating the alternatives.

Day's model addressed components of critical thinking (Johnson, 2015, p. 205).

1. Careful analysis and evaluation, identification of principles and values, and a statement of ethical issues or questions.

2. Analysis; the weighing of competing values and principles, and consideration of external factors are included. Examination of duties or loyalties to various parties and discussion of applicable ethical theories are evaluated.

3. The rendering of a decision and defense based on moral theory.

An understanding of issues and implications was important (Lloyd & Kidder, 1997, p. 148). Rittel and Webber described it best to develop and conceive all possible solutions ahead of time (1973, p. 161); to ask how did we get here (1973, p. 165)? Blanchard and Peale advised to check questions: "1. Is it legal? 2. Is it balanced? 3. How will it make me feel about myself?" (1988, p. 27).

The Dali Lama said solutions to ethical dilemmas needed to include careful consideration of context and the entire situation (1999). Decisions pertaining to ethics brought with them conflicts and emotions influencing cognitive processes (Anderson & Davies, 2000, p. 717). The decision maker may justify actions and continue to do so.

Dr. Anderson described displacement of responsibility and shifting of blame; ethics depended on individual belief systems; one needed to stay true to self. Many times there was no definitive answer. Individuals needed to be able to defend their decisions. The individual decided what "ought" to be done although "ought" was difficult to define many times (personal communication, July 11, 2016). Some may have convinced themselves in their particular situation moral standards did not apply (Kitchener, 1984, p. 44), and considered their actions as

justified. Ethical decisions involved many different factors; rational and nonrational. Legal requirements and self interest were identified as most important factors in ethical decision making by construction professionals (Fan & Fox, 2009, p. 67).

Nonrational Processes in Decision Making

Nonrational Processes in Ethical Decision Making viewed prior decision-making models as unproven and emphasized nonrational factors influencing thoughts and behaviors (Rogerson et al., 2011, p. 614). Citing Kitchener's two levels of moral reasoning; intuition or immediate, and critical evaluative or after some thought on the matter, authors argued variables such as intuition had not been sufficiently addressed when researching decision making. How people would act was not necessarily how people should act. Factors such as responses to dilemmas differed depending if person asked was actually in the situation rather than someone else. The notoriety of the issue may have been a factor; who was aware of the situation? "Contextual, interpersonal, and intuitive factors are inextricably linked and inexorably influential in process of ethical decision making" (Rogerson et al., 2011, p. 616). People reacted very differently in situations involving gains or losses, meaning risk takers measured success based on outcome, and as having been a benefit or a detriment. Minimizing discomfort and avoiding difficult circumstances may have led to delay or avoidance altogether.

Rogerson et al. included a concept from Baron called confirmation bias (2011). If the decision maker felt something should be a certain way then information was sought to confirm. Internal conflicts of interest were cited (Stark, 2005) as being a major detrimental factor due to self-serving bias. Non-rational decisions could be ethical violations quelling immediate desire versus a fiduciary responsibility (Rogerson et al., 2011). Although ethics training was based on rational factors, intuitions, emotions, and personal bias were insidious. Seeking alternative

actions, being a devil's advocate, and gathering all of the facts were recommendations concluding individuals viewed issues through their lens of reasoning.

Personal Relationships

The lack of literature on impacts personal relationships had between individuals on the team was noteworthy. Dr. Strathe of Iowa State University emphasized ethical decisions were made difficult because of relationships, especially among colleagues (personal communication, July 15, 2016). Rogerson et al. felt personal loyalty overrode ethical principles when decisions were made (2011, p. 618).

Moral Courage

The Dali Lama defined ethics as an "indispensable interface between my desire to be happy and yours" (1999, p. 47). Gandhi stated courage and patience were qualities needed when placed in difficult circumstances (1962). In a professionalism and leadership course Dr. Marlene Strathe stated: What is the line in the sand where we say no? I won't compromise my position, I'll lose my job before doing this, even if directed to do so (personal communication, July 15, 2016). Moral courage was described as maintaining personal values even when doing so may have been costly (Johnson, 2015). Ethical leadership included courage to challenge unethical decisions. A leader had to answer to higher values and followers needed to stay in line (personal communication, July 15, 2016). Moral courage meant taking high ground; to have demonstrated personal values and virtues even when outcomes may have been distressing and uncomfortable (Anderson & Handelsman, 2011, p. 31). This was the most essential quality Gandhi exemplified in his leadership noting "In the end, it is moral courage that determines the standard of leadership in the practical arena of politics, business, academics, and the community" (Nair, 1994, p. 49).

Dilemmas on projects involved moral courage to have made ethical decisions (Loui, 2005, p. 387).

Decision Making

Managers face many ethical pressures in decision making. "Ethics is concerned with the kinds of values and morals an individual or society finds desirable or appropriate" (Northouse, 2010, p. 378), and was a big part of leadership (Anderson et al., 2009). Ethical dilemmas were present when complete and truthful disclosure conflicted with personal or organizational objectives in workplace (McQueeney, 2006, p. 161). Pressure to support family were commonly cited drivers of ethical dilemmas (Gilley et al., 2008, p. 193). Trevino indicated job context, culture, norms, roles, authority, management pressures, and characteristics of an industry determined how employees reacted and made decisions (1992, p. 451). Organizational culture of winning at any cost had an impact on the decisions employees and managers made (Dean & Beggs, 2006, p. 23). Managers used lower level moral reasoning to resolve business context dilemmas than in their personal lives, accepting different values and norms producing different decisions at work (Trevino, 1992, p. 450). Managers were consciously or unconsciously prioritizing values at their organization compared to personal lives (Anderson et al., 2009, p. 21).

The Dali Lama provided an example of decisions that involved the entire context of a situation. If someone was being chased by an enemy in a war zone and pursuer asked which way did they go? The respondent knew answering the question may get the pursued killed. Would it be permissible to lie in this instance? The Dali Lama noted it was (1999, p. 153). A similar example asked if the correct thing to do was to expose a Jewish person to a Nazi soldier in war, if revealing this would have led to their death (Kitchener, 1984, p. 52). Careful reconsideration of the concept of following some moral principles without exception may have been needed

(Kitchener, 1984, p. 52). Ethical senses differed among people (Anderson & Davies, 2000, p. 720). The Nazi would have held different views than the Jewish person. There may not have been one correct solution hence the dilemma (Rittel & Webber, 1973, p.159). A dilemma was defined as having "good reasons to take different courses of action" (Kitchener, 1984, p. 53).

In *The Parable of the Sadhu*, a group of affluent professionals hiked the Himalayas in Nepal and came upon a dying holy man, but still decided to continue (McCoy, 1983). Some gave him clothing, but none stopped their trek completely to save him. One hiker from the United States who was on this once in a lifetime trip said, "I feel that what happened with the Sadhu is a good example of the breakdown between the individual ethic and the corporate ethic. No one person was willing to assume ultimate responsibility for the Sadhu" (McCoy, 1983, p. 104). "No one else on the mountain was willing to commit himself beyond certain self-imposed limits" (McCoy, 1983, p. 106). Moral dilemmas are ambiguous, and perhaps have more than one solution. This experience paralleled many decisions in the business world, and failure to act was a decision itself (McCoy, 1983, p. 106). The individuals recognized the Sadhu deserved support but not one would cancel their plans. The parable asked individuals to consider personal responsibility when one considers themselves ethical (McCoy, 1983, p. 108).

Three examples of poor decision making included the contractor for Colorado Convention Center that received $1,300,000 in penalties and could not bid to city of Denver for a year (Murray, 2020). Construction executives working on a large a multi-media corporation project in New York City faced hundreds of thousands of dollars in fines and years of imprisonment on tax evasion charges (DOJ, 2020). Individuals working on a national laboratory in Northern California faced hundreds of thousands of dollars in fines and years of imprisonment for charges including wire fraud (DOJ, 2019).

Leadership

Ethical decision making is leadership. Johnson stressed influence leaders had over a group involved personal moral behavior and declared "Ethics is at the heart of leadership" (2015, p. xvi). Ethics was doing the right thing, it may not be easy, and may not be popular (personal communication, July 15, 2016). Silence was not acceptable; a leader who was a board member must have voiced opinions if held (Anderson & Davies, 2000, p. 713). Leaders needed to be aware of limits of good intentions and bias needed to be identified especially when emotions were involved (Rogersen et al., 2011, p. 622).

Dean Lori Berquam of the University of Wisconsin – Madison confirmed this view; dilemmas came from small things that led to bigger things. She explained once a decision was made, an individual could not take it back; you had to own it (personal communication, July 13, 2016). Shafer-Landau determined the slippery slope of small decisions can grow to larger ones (2015, p. 134). Leaders possessing integrity were consistent between what was said publicly and private thoughts and actions (Shafer-Landau, 2015). An act involving integrity was defined by business leaders as doing something they would not mind having had published on the front page of a newspaper (Anderson et al., 2009, p. 26). Following up on integrity was important noted integrity was saying what I did and doing what I said, and then evaluation of that decision (Dr. Dietz, personal communication, July 12, 2016).

Ethics in Industries

The energy, banking, and pharmaceutical industries fell prey to poor ethical decisions and experienced costly losses. Organizations such as Enron, WorldCom, and Tyco used to be on top of their respective industries until poor decisions resulted in a reputation of greed, loss of trust, and criminality (Doran, 2004). In *Why They Do It?,* executives made accounting adjustments to

have met earnings targets, a practice identified as common (Soltes, 2016, p. 177). This process was similar to front-end loading of a schedule of values in construction (Jackson, 2000, p. 93).

Following scandals, many construction companies hired chief ethics and compliance officers. These individuals remarked about lack of compliance; "You look at the financial services companies, they have robust compliance. How much of that is internal desire, and how much of it is external pressure? Here in construction, there is not external pressure. It's all internal" (Brenzel, 2018, p. 8)

Ethics in U.S. Commercial Construction

Construction had very unique aspects inherent to each project such as billing decisions which are many times subjective, making it vulnerable to economic crime (Shaw, 2010). Professionals continually faced ethical problems complicated by the nature of their business (Fan & Fox, 2009, p. 67). Different contract models among public and private organizations made it difficult for companies to navigate (Shaw, 2010). ERC listed watchdog groups citing complexities as being a reason for high risks of corruption. Construction organizations operated in unstable economic environments noting lack of oversight, and dealing with unpredictable public officials (ERC, 2013, p. 6).

The Department of Commerce indicated construction in the United States accounted for $1.59 trillion gross output in 2021. According to Bureau of Economic Analysis data, the residential and non-residential construction market was valued at 6.62% of the 24 trillion dollar Gross Domestic Product (GDP) in 2021.

Managers who made decisions every day faced pressure (ERC, 2013). "The construction industry lags far behind in its efforts to shed some light on the complex issues of ethics" (Jackson, 2000, p. 10). To resolve a problem one must first acknowledge depth and breadth.

ERC reported 26% of middle managers had been pressured to compromise organizational standards of conduct (2013, p. 33). Further, 67% observed some form of misconduct in the prior year (ERC, 2013, p. 33). Dr. Jackson found a lack of accountability in the industry (2000, p. 112). Figure 1 is a decision model for construction managers created to illustrate the dynamics of a project. Every decision involves pressures from various individual interests and priorities of different stakeholders. Decisions by a construction manager impact different stakeholders such as public agencies, supervisors, owners, subcontractors/vendors, staff, and vice versa.

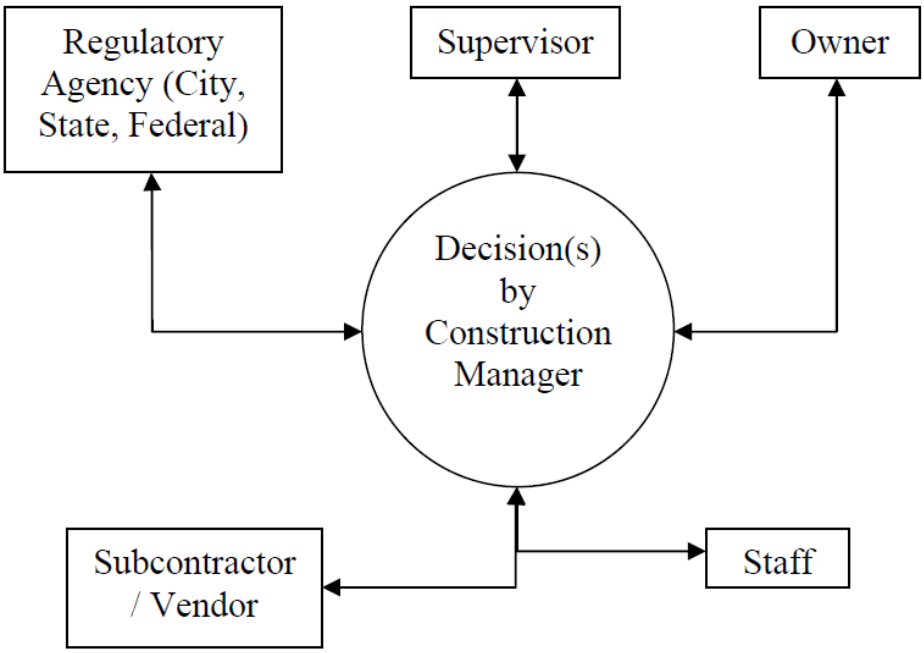

Figure 1

Individual Decision Making by Construction Manager Impacts

Fraud in U.S. Commercial Construction

The U.S. Government was aware of ethical issues in construction. In 2009, President Barack Obama created a financial fraud enforcement task force (Office of the Press Secretary, The White House, 2009). The task force investigated a number of individuals and construction

companies. In 2019 the Justice Department announced a Procurement Collusion Strike Force (PCSF) that focused on forms of collusion impacting victims. “This plea is a warning to contractors engaged in bid-rigging and fraud that they will be held accountable”, per assistant attorney general Makan Delrahim (Powers, 2019, p. 1). United States attorneys in California, Colorado, Florida, Georgia, Illinois, Michigan, New York, Ohio, Pennsylvania, Texas, Virginia, and Washington, DC coordinated efforts targeting construction (DOJ, 2019; Powers, 2019).

In 2022, the PCSF welcomed the U. S. Department of Energy (DOE), Department of the Interior (DOI), Department of Transportation (DOT), and the Environmental Protection Agency (EPA). ”Rooting out waste, fraud, and abuse in government spending is at the core of our mission”, said the inspector general Mark Lee Greenblatt for the DOI (DOJ, 2022, p. 1). The government press release mentioned the numerous new programs such as the Inflation Reduction Act and the trillions of spending. The PCSF builds on prior U.S. Federal Sentencing Guidelines for Organizations (FSGO) which established a framework to punish organizations that chose not to follow the law (ERC, 2013, p. 5). The Sarbanes-Oxley Act of 2002 also detailed expectations of organizations with regard to following the law (Murphy, 2002).

Bid rigging occurred and involved inside information, examples included the $233,000,000 Colorado Convention Center in 2019. “The communications between…were improper and gave (name withheld) an unfair advantage in the competitive bidding process” (Murray, 2020, p. 3). The contractor fought charges citing an abuse of power by Denver unfairly singling them out then eventually dropped the retort (Kenney, 2019). The Southern District of New York attained guilty pleas for individuals from a large construction company participating in a $5,800,000 multi-year scheme. “Each of the defendants participated in a scheme to obtain bribes from construction sub-contractors who paid kickbacks to defendants in exchange for being

awarded various construction contracts and sub-contracts" (DOJ, 2019, p. 1). The Northern District of California recently attained convictions for a construction company submitting fraudulent bids over multiple years at a federal Department of Energy laboratory. "…an undercover agent – won the contract by ensuring the lowest bid on the renovation project was provided by the developer" (DOJ, 2019). These examples identified a national issue that was not limited to a single geographic area.

The repeated ethical transgressions and violations of the law may be systemic. "Despite more attention to illegal and unethical actions, individuals still "cross the line" into questionable areas of business practice - whether due to temptation, market pressure, or greed…it's really systemic in the industry" said Theresa Carlson, supervisor of the FBI's white collar crime division in Birmingham, AL. "There is little oversight and accountability" (ENR, 2005, p. 26). The fraud was prevalent; "But these cases aren't one-offs. Some of the city's top general contractors…have paid millions in fines and penalties related to major fraud charges over the last three decades" (Brenzel, 2018, p. 2). Damages appeared to have been a business expense; "Large construction companies often emerge from corruption cases relatively unscathed, even when found to be directly involved in wrongdoing. They pay a fine, issue and apologetic statement and continue to bid on work" (Brenzel, 2020, p. 2). The Manhattan District Attorney noted the government was not interested in putting companies out of business as this resulted in lost jobs, "Many of these companies despite criminal wrongdoing, they do good work in the construction industry" (Brenzel, 2020, p. 7).

Content Listing on U.S. Construction Fraud

A content listing dated August 1, 2016 had been compiled by the author on U.S. construction fraud. Content included 110 articles from January 1, 2005-April 30, 2016. Figures

2 through 4 identified the number articles each year; type of article, fraud, prevalence of the 11 categories, and the number of articles.

Of 110 articles, prevalent categories of fraud were as follows.

1. Other/general fraud (38)
2. Misrepresentations (31)
3. Bribery/collusion (27)
4. Overbilling (14)

The article types are broken down as follows.

1. Government reports (58)
2. Magazine articles or trade publications (25)
3. Newspaper articles (21)
4. Web publications/other (6)

The majority of documents came from government press releases of the Federal Bureau of Investigation (FBI) and the Department of Justice (DOJ) websites such as *www.justice.gov*. These websites included useful reference material. Appendix B2 included direct quotes detailing the "everybody does it" theme. Appendix B3 detailed the category safety.

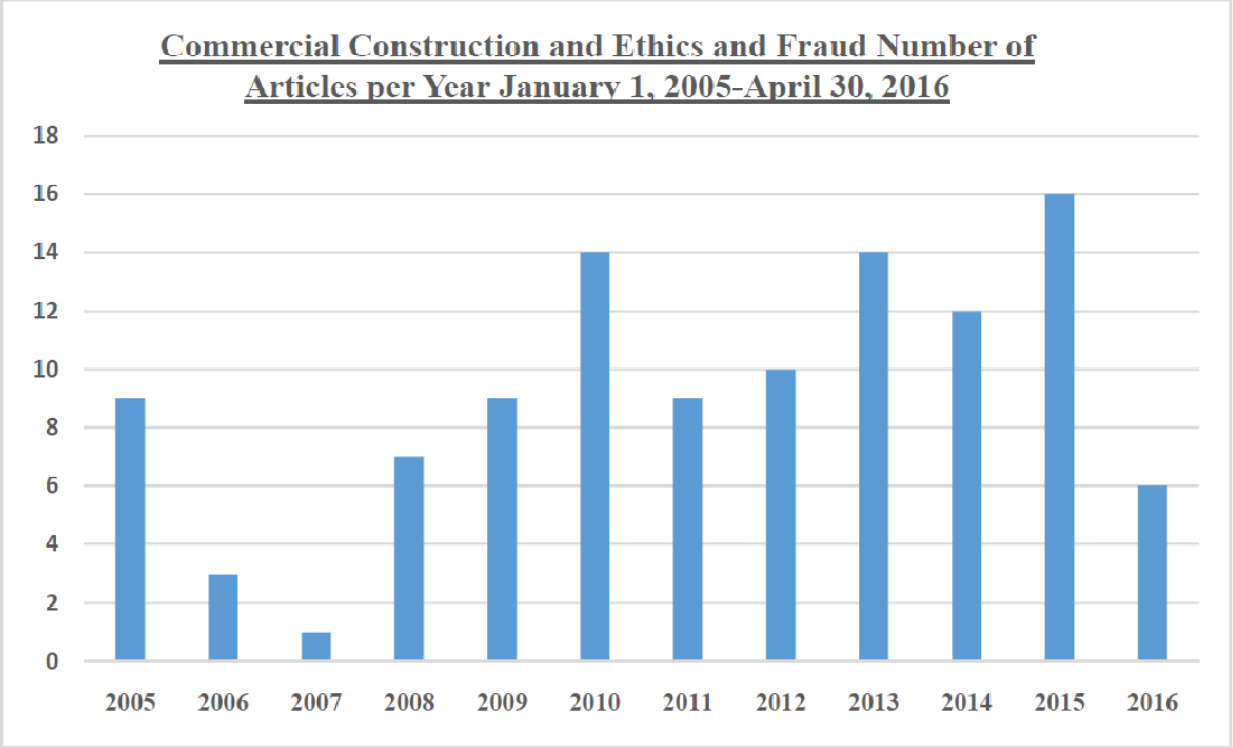

Figure 2

Number of Articles Each Year Included in Content Listing

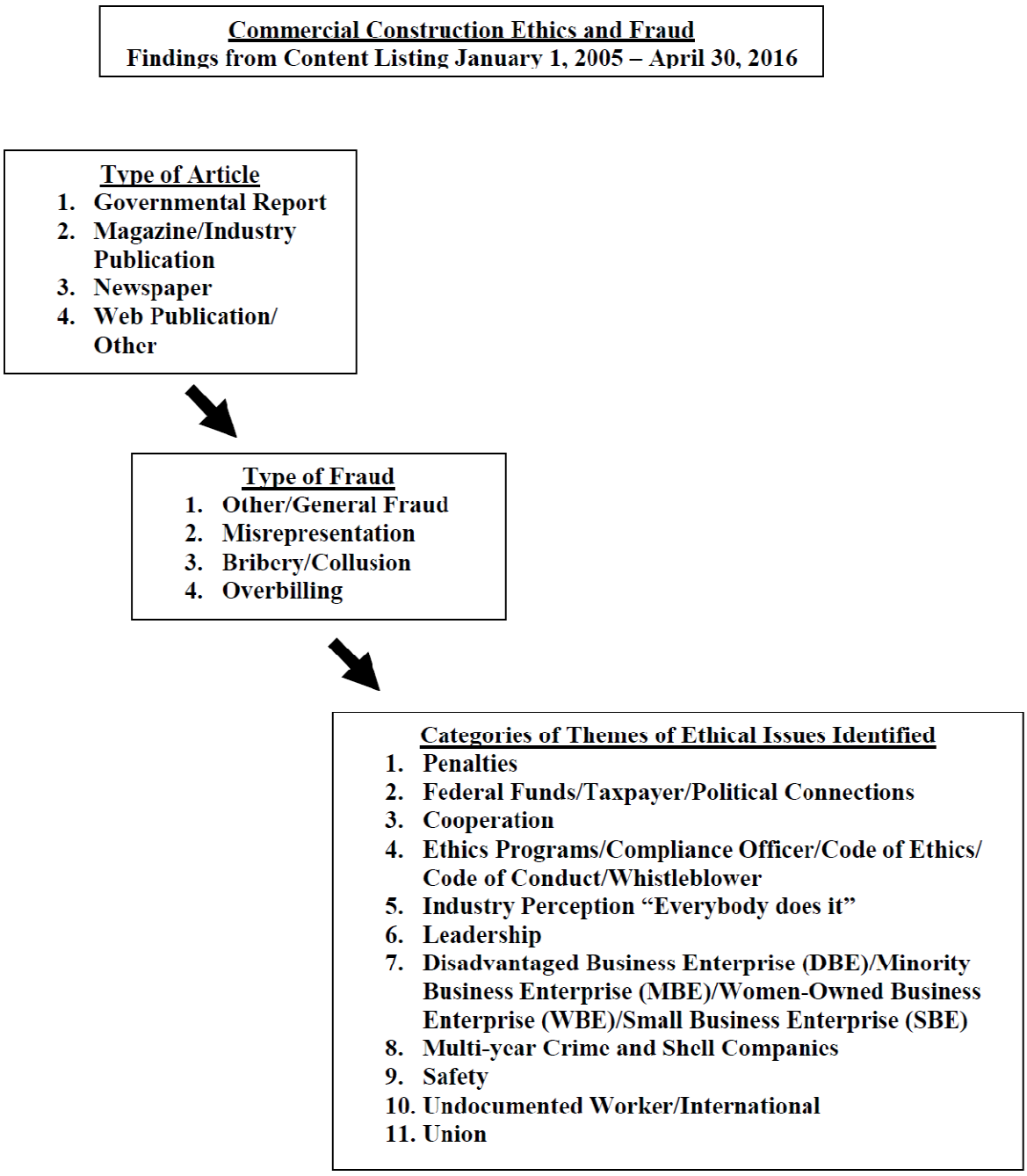

Figure 3

Findings Identifying Type of Article, Type of Fraud, and Prevalent Categories

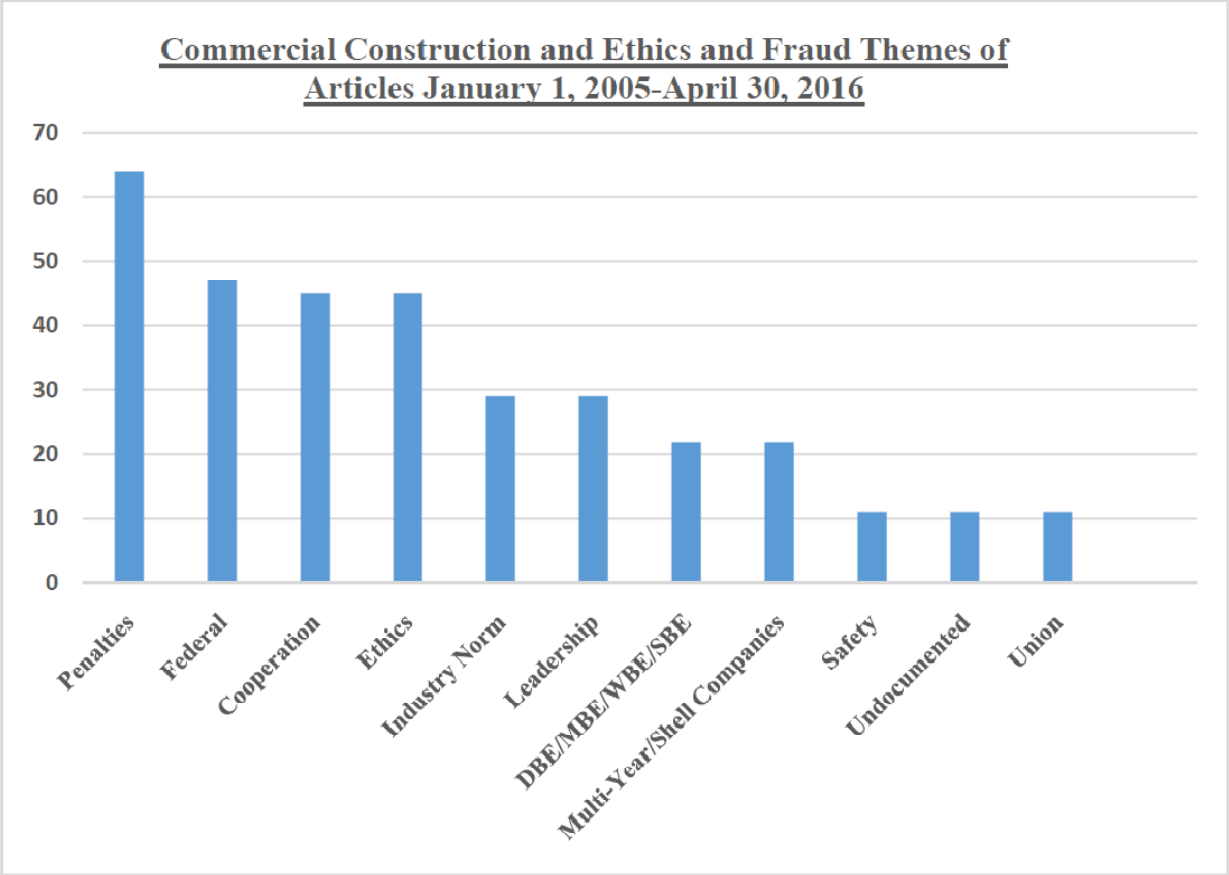

Figure 4

Content Listing Identifying 11 Prevalent Categories and the Number of Articles

McQueeney cited Schaupp and Lane who identified newspaper articles as providing real world orientation often missed in ethics case discussions (2006). Case scenarios based on true events prevented students from adopting the press point of view (McQueeney, 2006, p. 166). The content listing informed this study and provided valuable resources for instructors.

Industry Organizations

Professional organizations promoted awareness along with social responsibility (Fan & Fox, 2009, p. 67). Guiding coalitions sought to produce significant change required leadership credibility, commitment, and drive (Gilley et al., 2008, p. 205). The Construction Management Association of America (CMAA) was formed in 1982 to establish standards for managing capital construction projects and promote CM (2021). The CMAA has 29 regional chapters and 16,000 members with the website www.cmaanet.org including a code of ethics.

The Ethics Resource Center (ERC) and the Construction Industry Ethics and Compliance Initiative (CIECI) were formed to enhance ethics in business and construction. ERC was formed in 1922 and informed public dialogue on ethical behavior (2021). ERC is part of the American Society of Civil Engineers (ASCE, 2021). The ASCE website www.asce.org civil engineering charter opening page included "corruption in the global construction industry is a huge economic burden estimated to approach $500 billion annually" (2021).

CIECI is a non-profit association of industry participants dedicated to promoting integrity and ethical conduct (2014). "The CEO-driven organization was founded in 2008 with a belief a culture of ethics and compliance starts at the top" (Tuchman, 2012, p. 1), a view held by educators (Abdul-Rahman et al., 2010, p. 3747; Jackson, 1998, p. 208). CIECI was principal sponsor for the ERC ethics survey in 2013 (p. iv). In 2012, then current chairman of CIECI noted the organization can elevate the industry and mitigate perception of corruption (Tuchman).

Corporations should have led in policing ethics in construction (ERC, 2013). CIECI member organizations were involved in many unethical acts (ERC, 2013). Some were listed in Appendix B; *Fraud in the Commercial Construction Industry*.

As of February 2021, the CIECI website www.ciecinitiative.org included a copyright year of 2014 on the bottom and the most recent article on the "News" page was dated 2013. CIECI noted it hosted a Best Practices Forum each year as well as a Spring meeting. In this forum on October 14, 2021, a "Lesson Learned – Colorado Convention Center" topic was listed on the agenda for a 45 minute time slot with five of the general contractors' managers scheduled to speak on the subject (2022).

The Associated General Contractors' (AGC) website www.agc.org included the golden rule; treat others as you wanted to be treated (AGC, 2018a; Kohlberg, 1981, p. xxxii). AGC of America's focus was neither narrow nor limited (2018b). No other trade organization covered such a wide variety of important construction issues (AGC, 2018b). To create a "strong, vibrant, competitive, and safe construction market", experts and activists made sure contractors' voices are heard on key issues (AGC, 2018b). AGC website included the listed role "To support high ethical and professional standards among the members of the association, developing information on ethics policies and programs for guidance of members in their business and professional relations" (2018a). AGC of America listed the following industry priorities in this order (2018b).

1. Construction law
2. Energy and the environment
3. Infrastructure
4. Labor and human resources

5. Procurement
6. Risk management
7. Safety and health
8. Tax
9. Technology
10. Workforce development

Construction Ethics Research

There were few published research studies on ethics in construction. "Everybody does it" was a theme found in the ERC survey sponsored by ASCE (2013, p. 2), identified as "business as usual" in a civil engineering magazine. The concept was called a "syndrome" of "everybody's doing it" in a 1998 study (Jackson, p. 205). ERC concluded construction had unique pressures that may have been so intense that led employees to compromise standards (2013, p. 14).

ERC 2013 findings included:

1. 40% of employees reported pressure to compromise standards in largest companies (p. 20).
2. Employees who work for public construction companies expressed greater tolerance for questionable activities (p. 23).
3. Employees' views of the effectiveness of an organization's ethics program were more positive by upper management than middle managers (p. 32).
4. 67% of middle managers observed misconduct the prior year (p. 33).
5. 26% of middle managers felt pressure to compromise ethical standards (p. 33).
6. Main office supervisors had pressure to compromise standards. These supervisors were less likely to report wrongdoings observed (p. 35). Of employees who felt pressure, 84% observed some sort of misconduct (p. 12).

One sponsor organization of the ERC report had a former executive who pled guilty in connection with $5.2 million kickback scheme a year after the report (ERC, 2013, p. iv; FBI,

2014, December 4). He was sentenced to 42 months in prison (ERC, 2013, p. iv; FBI, 2015, March 23). Other construction organizations advising ERC had been involved in unethical decisions over the last decade (ERC, 2013, p. v; FBI, 2011). The ERC study sponsored by CIECI made three industry group recommendations (2013). These were:

1. Combat pressure inherent to industry.
2. Establish benchmarks for self-regulation and accountability.
3. Conduct further inquiry into on-site management of misconduct.

The study emphasized industry should be applauded for taking the lead in promoting compliance and shared best practices (ERC, 2013). Follow-up surveys were not identified as of January 2022.

Professional Ethics for the Construction Industry detailed corporate goals and financial success as out of line with industry ethical practices, norms, or rules. Construction organizations "institutionalized" questionable practices CM graduates faced upon entering the workplace (Mirsky & Schaufelberger, 2015, p. vii). Ethical challenges included topics of environment, bid shopping, receipt of favors, award of subcontracts, false claims, submission of payroll data, timesheets, misconduct, federal bribery statutes, and bad-mouthing a competitor. The text did not include many authentic examples of cases representing fraud.

To "give students or practitioners the breadth and depth of understanding required to successfully negotiate the ethical challenges facing the construction organization of today" (Mirsky & Schaufelberger, 2015, back cover). Concluding long-term success depended on following sound ethical principles and at times decisions run contrary to financial success of the company. Dilemmas made it very difficult for employees to know how to proceed. An example

included poor decision making where a contractor inaccurately classified employees to save money on compensation.

Authentic examples of similar practices were detailed in newspaper and government reports included in Appendix B. An article included "At the heart of the probe is what prosecutors say is an industry-wide practice known as "8 and 2" in which construction companies fraudulently bill clients for hours not worked by labor foremen" (FBI, 2012). A third example was overbilling. Inaccurate billing occurred from improper timesheets and false claims. The federal government had protections in place such as the False Claims Act and federal bribery statutes to minimize this type of behavior (Mirsky & Schaufelberger, 2015).

Even bringing up ethics was a difficult task in construction (Jackson, 2000, p. 4), she did not indicate why. Themes found in the content listing as per Appendix B included "everybody does it" and collusion:

> Loretta Lynch, U.S. Attorney for the Eastern District of New York, had a warning for the city's construction industry. The message should be clear to all who are engaged in similar contract billing fraud: You are in our sights, she said. And the defense that "everyone does it" will not be a shield against law enforcement". Construction giant (name withheld) charged with defrauding clients in three separate schemes and will pay over $50 million and institute comprehensive reforms (FBI, 2012, p. 3).

> The U.S. Justice Dept. has launched a multipronged effort to root out bid-rigging, price-fixing and other forms of collusion in construction and other sectors on local, state and federal government funded contracts, which it says undermines competition in procurement. Officials say investigations will also cover projects funded by private owners…"This plea is a warning to contractors engaged in bid rigging and fraud that they will be held accountable", Assistant Attorney General Delrahim said at the time (Powers, 2019, p. 1).

Professionals perceived questionable and improper bidding practices as the main ethical transgression whether or not an organization had a code of ethics (Jackson, 2000, p. 110). Interestingly for those companies with a code of ethics, employees noted misrepresentation of value of work billed or overbilling occurred more frequently, this was the second most perceived

transgression. The remaining issues were less serious such as misrepresentation of employee credentials.

An article in ENR titled *Construction Industry Faces Ethical Challenges, Exec Says:* "There is a foolish assumption that you can't be straight up and make money", "or that profits/success and ethics are in natural conflict" (Carlsen, 2008, p. 1). Ethical decisions may have put an organization at a competitive disadvantage (Prior Jonson et al., 2016).

Codes of Ethics for Construction Management (CM)

Existing for centuries, "Codes of Ethics should reflect the institution's ethical identity" (Anderson et al., 2009, p. 25). These along with formal training included moral rules and principles grounded in theory (Kitchener, 1984, p. 45), and played an important role in defined and maintained ethical climates (Johnson, 2015). To protect professions from outside regulation codes were originally developed as self policing, and were more "protective of the profession itself than of the consumer and omit many issues of ethical concerns" (Kitchener, 1984, p. 45).

Codes of Conduct existed in nearly all construction organizations. Most employees (85%) said they consulted codes for guidance on ethical issues (ERC, 2013, p. 3). "Unless a company intentionally defines the parameters of ethical conduct for its employees, there is no assurance of consistent behavior on decision making" (Jackson, 2000, p. 12). Often controls were in place to identify acts prior to issues becoming problematic. In her dissertation Jackson identified contractors getting into trouble due to lack of clear ethical standards (2000, p. 12).

The odds of ethics taking hold diminished as disconnects existed among practices of organizations and stated goals (Gilley et al., 2008, p. 210). A founding member of CIECI and CEO of a very large construction company declared a formal code as being a "great offense" and "good defense if you do get into trouble". He stated "how litigious things have become, how

difficult it was to comply and how you had to be perfect-not just good, but perfect". "We have a duty to lead by example" (Tuchman, 2012, p. 1). Within three years after this quote this construction company was ordered by the Department of Justice (DOJ) in New York to pay millions of dollars in fines (DOJ, 2015).

General Counsel of a very large construction company quoted in the same article about CIECI; "Having a formal compliance program shows that you are a good corporate citizen" (Tuchman, 2012, p. 1). This counsel represented the same organization listed in an FBI press briefing as having paid millions in fines months prior due to pollutants illegally discharged into a California river over several years (FBI, 2011). More recently the CEO of the large company involved in the Colorado Convention Center scandal was quoted "Simply put, we did not meet our own expectations" (Murray, 2020).

There was a scarcity of research related to codes for construction professionals (Sinha et al., 2007, p. 295). Since 2007, construction contractors awarded federal projects over $5 million were required to have a code (Mirsky & Shaufelberger, 2015, p. 47; Tuchman, 2012). Dr. Jackson found no difference in ethical transgressions if a construction company had a code of ethics (2000).

Costs of Unethical Activity

The costs of unethical activity were not confined to lost profits and included losing talented individuals, capital, safety, and quality of construction projects. Consequences may have been very serious to individuals and organizations (McQueeney, 2006, p. 160). ERC reported construction companies suffered reputational damage when violations became public (2013, p. 6). A survey completed in 2004 indicated 61% of industry professionals believed unethical behavior affected costs of projects. A range from 1/2 to 2% of cost overruns were

estimated by 35% of the survey participants. A quarter estimated cost overruns between 2% and 5%, meaning anywhere from $20,000 to $50,000 for every million dollars spent on a project was lost or "unaccounted for" due to unethical activity (Doran, 2004, p. 5). Potential for fraud was present due to financial aspects of CM and poor oversight (ERC, 2013). Issues involved bid shopping, change orders, payments, and claims games. These affected contractors, subcontractors, architects, engineers, facility managers, and consultants directly or indirectly (Doran, 2004). The quality of projects was also impacted by unethical decisions.

> Results indicate that various forms of unethical conducts have significant impact on construction quality. Therefore, the issue of professional ethics plays an important role in reducing quality problems and preventing inconvenience to all parties concerned. A majority of the respondents agreed that unethical conducts can be the main cause of poor quality in the construction industry (Abdul-Rahman et al., 2010, p. 3742).

Whistleblowing

Bruce Lee was quoted "a wise man can always be found alone; a weak man can always be found in a crowd" (original source unknown). Whistleblowing in engineering and construction was a rare occurrence. Few benefitted from whistleblowing, and most suffered dire consequences with regard to their careers (McQueeney, 2006, p. 166). Over a third (34%) of construction employees lost their jobs as retaliation for reporting unethical acts in their organizations (ERC, 2013, p. 44).

Harassment, retaliation, and turnover occurred due to poor ethical decisions that led employees to look the other way (ERC, p. 18). A third of those who are retaliated against left the organization within two years (p. 19). Trevino emphasized obedience to authority, group conformity, and maintaining status quo limited managers' capacity to reason morally (1992, p. 450). A theme echoed in the construction industry magazine ENR.

> There are infinite ways to defraud the government and others of money. Crimes do not have to involve government dollars; it's a crime to rig bids on a private job too. This is

> how business is done. It's epidemic. How do we find out? It's usually the odd man out, disgruntled employees, ex-spouses or whistleblowers who tell us about crimes. I'd like to see more whistleblowers come forward (Staff, 2005, p. 30).

Government agencies identified methods of fraud reporting offering anonymous hotlines and reporting through "1 (800)" numbers and other methods. An example brochure is Figure 5.

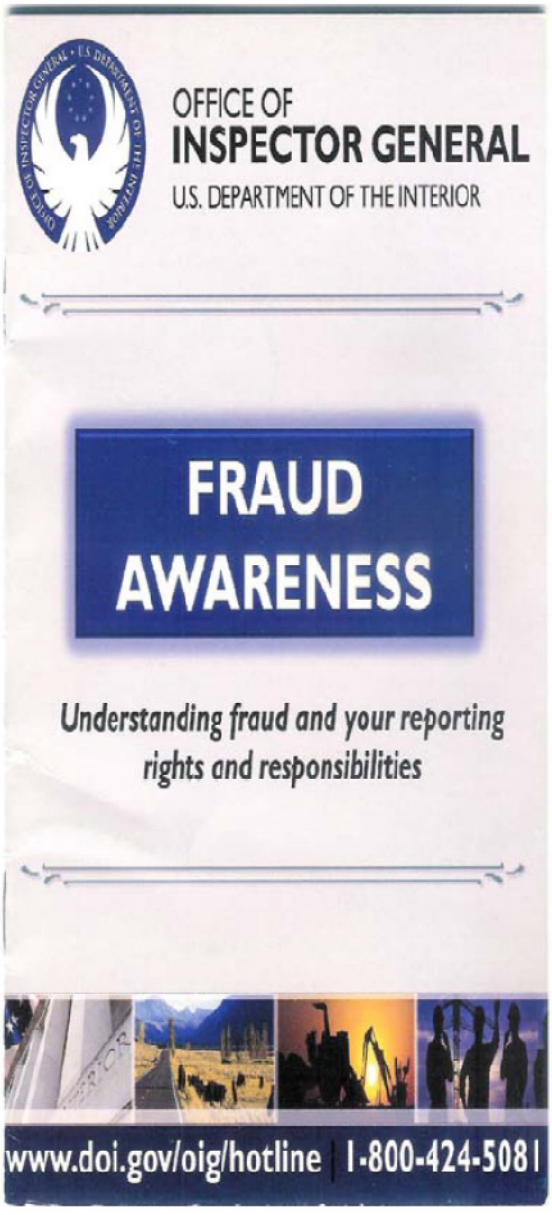

Figure 5

Office of Inspector General Government Brochure (2015) Fraud Awareness

Per the Office of the Inspector General (OIG), "the mission of the OIG is to provide independent oversight and promote excellence, integrity, and accountability with the programs, operations, and management of the Department of the Interior" (2015, p. 2). *Fraud Awareness* included subject matter to confront product substitutions, kickbacks, bribery, conflicts of interest, bid-rigging and collusion, small business set aside fraud, materials and time/labor overcharging (OIG, 2015). This was distributed by officials to inform on the definition, responsibilities, and action required by individuals when fraud was observed on government projects.

Reports of ethical concerns divulged to someone outside the company totaled one percent (ERC, 2013, p. 17). The ERC remarked this was good news so company management was given first opportunity to address the issue and reinforced employee confidence in an organization's reporting system. Managers who blew the whistle suffered consequences; few human resources professionals were interested in transforming an organization, ethical decision making usually went nowhere (Gilley et al., 2008, p. 202).

Investigators used subcontractors to get to the larger contractors. "Many contractors initially lowball their bids to secure work and make up for the difference by overbilling" said a construction attorney (Brenzel, 2018, p. 4). Per a former prosecutor with the Manhattan District Attorney's office, "As a result, several of the corruption investigations since the 1990s have focused on subcontractors because those firms "provide a window into peer-corruption and kickbacks" (Brenzel, 2018, p. 5).

A carpentry subcontractor filed a lawsuit claiming "after he raised questions, his company was abruptly fired from a (owner name withheld) project and then blocked from bidding on others, which destroyed his company". The subcontractor filing in court stated both the owner and the general contractor ignored "red flags" that the schemes "reached the highest

levels of these companies, permeated through many departments and levels of employees in different areas of the construction business" (Brenzel, 2018, p. 6). "This is how (contractor name withheld) runs its business…Everyone knows the risk of crossing (contractor name withheld), and (contractor name withheld) does not hesitate to impose its enormous market power on subcontractors that depend on (contractor name withheld) for work" (Brenzel, 2018, p. 5).

Ethics Education to Improve Decision Making

Ethics education may have improved moral courage to question, obey rules, or to whistleblow (Hashemian & Loui, 2010, p. 211). The amount of learning significantly predicted students' behavioral intent; the more students learned the less likely they were likely to have engaged in unethical activities (Nguyen et al., 2008, p. 66). A goal of ethics instruction was to foster development in moral judgment itself (Rest, 1984). Rest described classroom learning as having been exercised by students in the real world in terms of decisions made (Rest, 1984, p. 25). The analysis of controversial moral dilemmas promoting discussion among students was a successful strategy to learn (Loui, 2005, p. 388; Rest, 1984, p. 25). Educators alerted and prepared students for moral dilemmas they may have faced (Rest, 1984, p. 27). Ethics education was essential in preparing responsible engineers and builders (Colby & Sullivan, 2008), and was worthwhile (Cagle & Glasgo, 2008). Positive influences on individuals' moral efficacy, moral courage, and moral meaningfulness across engineering, sciences, and business resulted (May & Luth, 2013, p. 562). Dr. James Rest found development of moral judgment as having an important component in educating health professionals (1984, p. 24).

In *Moral Reasoning and Business Ethics: Implications for Research, Education, and Management*, Linda Trevino noted immoral behavior was situation specific (1992, p. 445). She

identified hypothetical dilemmas as having been utilized to determine right and wrong to justify decisions. Concluding higher education was a fitting setting for ethics education, and importance of professional judgment affecting society, industry norms influenced medical students (Trevino, 1992, p. 451). She stated "words like integrity and values are frequently used to characterize effective business leaders" (Trevino, 1992, p. 453), and noted "thoughts and words have little relationship to deeds" (Trevino, 1992, p. 452). Personal responsibility may have been a major factor leading to organizations acting ethically, identified as hypothetical moral dilemmas as having been integral to move students from one moral stage to the next higher one (Kohlberg, 1981, p. 27; Rest, 1986; Trevino, 1992, p. 454). This was a view shared by colleagues as a framework for evaluating dilemmas and decision making can be taught (Siller et al., 2009, p. 103, Sinha et al., 2004, p. 4).

At the turn of the millennium with corporate scandals business schools were tasked with developing ethical business leaders (Dean & Beggs, 2006, p. 16; Evans et al., 2006). Soltes identified nearly all U.S. business schools had ethics curriculum and good decision-making skills made better leaders (2016, p. 311). Soltes argued dilemmas offered as instruction differ greatly from real life. The real world consisted of people with different points of view and business leaders followed intuition when making ethical decisions regardless of ethics education (Soltes, 2016, p. 312). Literature both supported this view and disputed it (Rogerson et al., 2011). MBA programs taught ethics due to lack of undergraduate education identified by industry stakeholders in business schools (Dean & Beggs, 2006, p. 17). Authentic case studies can provide tools for instructors to teach ethical decision making.

The ACCE website included Bloom's taxonomy (1956) on *Document 103 – standards and criteria for accreditation of postsecondary construction education degree programs* (2016,

p. 10). Bloom's taxonomy (1956) included students as having been able to create, evaluate, analyze, apply, understand, and remember subject matter, see Figure 6. Engineering students identified with highest levels of Bloom's taxonomy when responding to the importance of quality ethics curriculum engaging in cognitive activities such as problem solving and decision making (Dean & Beggs, 2006, p. 22; Finelli et al., 2012, p. 482).

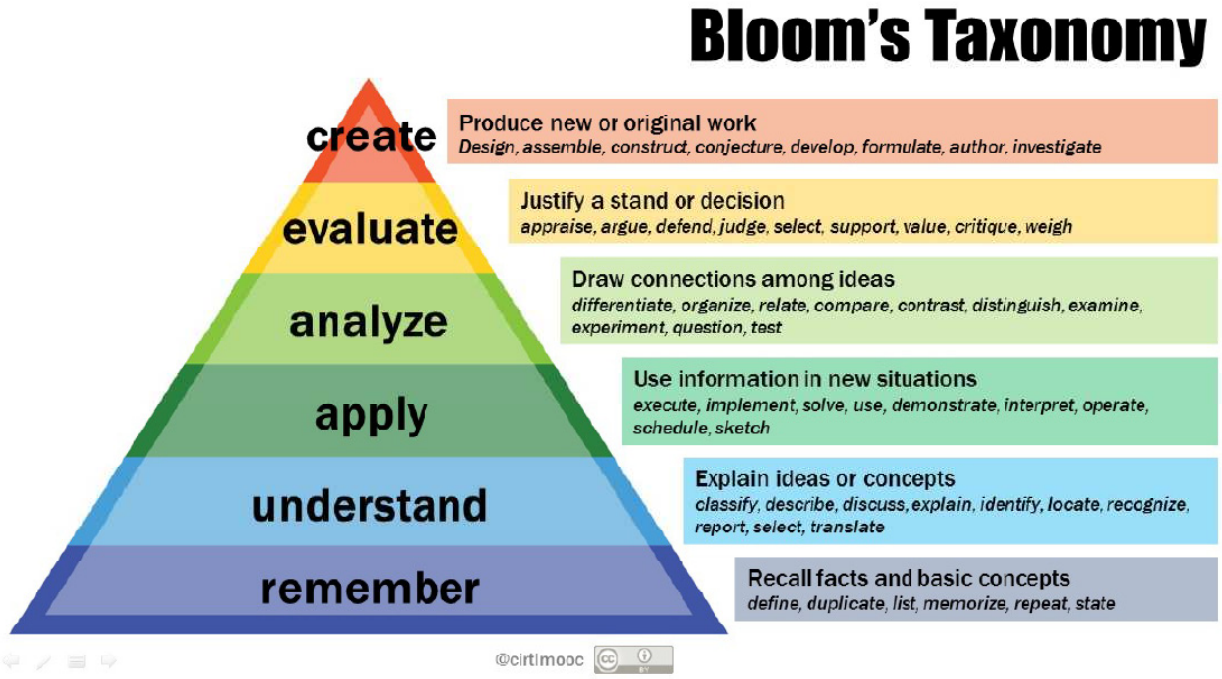

Figure 6

Bloom's Taxonomy (1956)

Knowledge of societal values were goals of construction ethics instruction (Sinha et al., 2007, p. 294), with individual decision-making processes the focus (Jackson, 1998, p. 208). However ethics training and education in construction was unstructured and importance neglected (Kang, et al., 2012, p. 533).

Dr. Jackson found 285 college construction students perceived industry behavior as unethical (1998, p. 203). She further detailed students came into industry "with higher ideals and ethical standards" (Jackson, 1998, p. 33) than experienced managers. There was a tendency of

younger less experienced students to have scored higher on ethical responses than older more experienced construction students (Jackson, 1998, p. 205). Mark Breslin, the CEO of the Northern California based Engineering and Utility Contractors Association identified a lack of ethics training in today's generation (Carlsen, 2008).

McQueeney discussed truthful communication conflicting with organizational objectives. Students without experience were baffled by an organization not wanting to address a problem. Students with experience understood company objectives as having been a priority (2006, p. 169). Individuals may have "become disenchanted with the harsh realities of the business", became less ethically sound in ideals as their career in construction progressed (Jackson, 2000, p. 33). Educators identified we were not preparing students for what they would face in the real world (Lloyd & Kidder, 1997). This may have been a "formula for disaster for the twenty-first century" (Jackson, 2000, p. 26).

Accreditation Organizations Guide

Societies and commissions such as the American Council for Construction Education (ACCE), and the Accreditation Board for Engineering and Technology (ABET) are responsible for accrediting higher education programs. Along with the Association to Advance Collegiate Schools of Business (AACSB), the boards mandate quantity of ethics instruction but did not detail how instruction to be provided (ABET, 2016; ACCE, 2016; Dean & Beggs, 2006, p. 17). In engineering ABET accredited over 20 different educational programs. Of these 20 programs, only civil engineering and construction had ethics requirements listed in the student learning outcomes (SLOs) (2016, p. 12). The council emphasized importance of continuous learning (2016, p. 4).

The goal of ACCE was to prepare graduates who were responsible leading members of society (2016, p. 4). Each commission or council included SLOs detailing ethics requirements for graduation. SLO 6 dictated a student must have met requirements to analyze professional decisions based on ethical principles (ACCE, 2016, p. 9). ACCE required expert instruction and encouraged regular evaluation of lesson plans reflecting changing construction technology and management trends (2016, p. 17). ACCE provided ratings for continuous improvement and acknowledgement of weaknesses when considering CM programs for accreditation (2016).

Effectiveness for Instruction

Clarkeburn talked of importance of students' participation along with the following two elements; ethical sensitivity and the ability to engage in sound moral reasoning. Students must have been able to recognize situations prior to have made moral decisions. Ethics education was effective (Dean & Beggs, 2006; Swanson, 2004), and can be taught (Carlson & Burke, 1998; Kohlberg, 1981; Rest, 1986; Sims & Felton, 2005; Trevino, 1992; Weber & Glyptis, 2000). Ethics courses had been found to have significant impact on students' ethical sensitivity and reasoning skills (Carlson & Burke, 1998; Weber & Glyptis, 2000). Findings from entry-level teacher instruction showed respondents considered developing ethical reasoning skills as being context important (Maxwell et al., 2016). The university setting was practical to support and encourage development of these skills (Clarkeburn, 2002), and also has solved societal problems (Lloyd & Kidder, 1997, p. 146). Nonetheless engineering ethics instruction had minimal systematic research but still supported and promoted development (Finelli et. al, 2012, p. 486).

Barriers to Effective Teaching

Kohlberg indicated teachers were moral educators (1981, p. 1). However faculty and students' indifference, competency, and workload were barriers to ethics education (Sinha et al.,

2004, p. 3). Some engineering faculty felt they were not qualified to have led ethical discussions (Sinha et al., 2004, p. 3). The balance between engineering instructors who taught technical coursework and demands of ethics were difficult (Siller et al., 2009). Another consideration was students held negative perceptions of faculty who produced ineffective experiences (Sims & Felton, 2005, p. 42).

University Professors and Teaching Ethics: Conceptualizations and Expectations detailed the role of professors at business schools (Dean & Beggs, 2006, p. 15). After the crisis involving Enron and WorldCom, university faculty were singled out as being negligent. MBA professors were specifically targeted as failing their duty. Research studied extent by which faculty believe they could teach effectively. Obstacles identified included (Dean & Beggs, 2006, p. 18):

1. Lack of training.
2. No formal education.
3. Not enough time.
4. No interest in teaching.
5. Felt the topic was covered elsewhere.

Faculty responded they can talk about ethics but trying to have impacted students' value system at this late stage was "practically impossible" (Dean & Beggs, 2006, p. 32).

How to Teach

How to teach ethics was an open question (Assundani et al., 2011). Ethics education was effective when content included moral dilemmas (Dean & Beggs, 2006, p. 20; Walling, 2015). Issues shall be immediate and personally relevant (McQueeney, 2006, p. 159). Instruction was difficult and students sensed contradictions in business (McQueeney, 2006, p. 158). Practical

obstacles such as a full curriculum had been found to stand in way of making progress teaching ethics rather than philosophical or ideological reasons (Maxwell et al., 2016).

Standalone Course

The AACSB recommended infused ethics content across the business curriculum which in turn required no ethics class (Swanson, 2004, p. 51). Swanson noted curriculum for business schools was up to each university and AACSB did not intrude (2004, p. 45). Ethics-related courses were a requirement of 50% medical, a third of business, and 17% of engineering undergraduate programs (Maxwell et al., 2016). Loui identified a single course for engineers would have produced better moral reasoning skills (2005, p. 383) than spread over a curriculum. Almost 75% of CM students in 1998 responded a standalone ethics course was not a requirement (Jackson, 1998, p. 202). Swanson wrote business schools had failed in their responsibility to launch a single class (2004, p. 45).

Spread Across Curriculum

Case studies can be spread among many courses throughout a curriculum (Hattab, 2004; Sinha et al., 2004, p. 4). This approach allowed students to have applied systematic intellectual framework encouraging analysis of duty, consequences, and interests. "Few studies had examined the effectiveness of integrating ethics" (Assundani et al., 2011, p. 108), but should have been completed (Sims & Felton, 2005, p. 42).

Students' Feedback

Students responded it was useful to have analyzed case studies in a classroom setting (Alpay, 2013, p. 1464). Many accreditation organizations included feedback of what worked in programs. Careful review of students' reactions to methods were concepts for success (ACCE, 2016; Siller et al., 2009). Students' feedback was viewed as being positive with regard to

experiential workshops on professional learning programs (Siller et al., 2009, p. 106). By way of student feedback each organization recommended the programs continually improve and identified improvement needed (ACCE, 2016, p. 17).

Case Study Content

Dean and Beggs found disconnects between ethics instruction and topics the business world would like to have been taught (2006, p. 41). Faculty identified an obligation to have discussed ethics with students and reviewed newspaper articles and analyzed models. Topics involved mostly legal rules and sanctions for how to have acted (Dean & Beggs, 2006, p. 38). Experiential and active learning was effective with identification of best courses of action as being important. However behaviors may not actually have been impacted. Instructors considered teaching penalties. What happened when acting unethically (Dean & Beggs, 2006, p. 41)? McQueeney identified actual outcomes of cases as having been very beneficial in underscoring the importance of ethical choices. He noted whistleblower case studies and impacts on careers should have been brought up at the end of a course (2006, p. 161). It was important for students to understand how their decisions may have career impacts.

Effectiveness of Case Studies

Case studies were effective for teaching ethics (Clarkeburn, 2002; Dean & Beggs, 2008; El-Zein, et al., 2007; Huschle, 2012; Park et al., 2012; McQueeney, 2006; Murphy, 2004; Nguyen et al., 2008; Siller et. al, 2009; Sims & Sims, 1991; Sinha et al, 2004; Trevino & McCabe, 1994). Students gained consciousness of consequences of unethical behavior through discussion and debate and made thoughtful decisions (Dean & Beggs, 2006, p. 23; 2008). Students had higher attainment of learning outcomes for ethical decision making when utilizing case studies than learning from instruction in moral theory alone (Huschle, 2012).

Problem solving was commonly used to have taught students in law, medicine, business, and other professions (Falkenberg & Woiceshyn, 2008). Why not CM? Medical schools utilized dilemmas as helping shape students' moral reasoning skills (Brinkman & Sims, 2001; Hattab, 2004; Sims & Felton, 2005; Trevino & McCabe, 1994). In nursing, group discussions based on analyses may have been most effective (Park et al., 2012). In marketing, shorter length case studies were determined appropriate for undergraduates (Murphy, 2004, p. 19). Focused on personal issues students were likely to encounter (Maclagan & Snell, 1992; Sims & Sims, 1991), case studies shall be presented in judgment free zones with themes on how decisions directly impacted careers (McQueeney, 2006, p. 159). CM students can learn decision making skills from ethical dilemmas included in case studies.

In a 2014 article *Educating engineers to embrace complexity and context,* Byrne and Mullally cited the term "wicked problem" which identified work by Rittel and Webber. A "wicked problem" was defined as a complex problem with no easy or correct answers. Students discussed practical and difficult decisions. Ethical sensitivity recognition, uncertainty, complexity, and greater context of situations were aspects of analyzed ethical dilemmas or "wicked problems" (Byrne, 2012). Reflective analysis was a goal of case study instruction in ethics (Sims & Felton, 2005).

Integrating Ethics into the Engineered Construction Curriculum identified case study instruction an effective method, and a lack of integration in other programs (Sinha et al., 2007, p. 292). Problem solving was a skill most needed and difficult to teach. There was an emphasis on knowledge of social responsibility and preparation that reflected moral dilemmas inevitably to be faced professionally (Sinha et al., 2007, p. 296).

> The purpose of specific ethics education, such as construction ethics, should not be to indoctrinate the individual with new values, but to assist individuals in clarifying and

> applying their ethical values as they encounter new, complex situations where it may not be obvious how ethical values may apply or where the appropriate application of one of these values may conflict with other ethical values (Sinha et al., 2004, p. 4).

Authentic case studies emphasized there may not always have been a "right" decision while possibly shifted moral attitudes toward improved decision making (Huschle, 2012, p. 249). Auburn University emphasized authenticity of experiences as having been effective for undergraduates (Stanwick, 2010).

Limitations of Using Case Studies as a Method

Case studies may have presented scenarios as being ethical dilemmas while others may not have viewed context similarly (Marshall & Dewe, 1997). Students may have commented one way and did something different when faced with same scenario in the real world (Rest, 1988; Rossouw, 2002; Trevino, 1992). Different roles may have resulted in different context. If some individuals chose to act unethically in life, ethics instruction most likely did not change their direction. There was little research as to behavioral changes that occurred as a result of ethics instruction (Dean & Beggs, 2006, p. 25; Loui, 2005, p. 383). A goal of ethics instruction was not to teach students to be good people, but to recognize how they made decisions.

Methods of Instruction

Kohlberg cited Dewey who noted educational experiences aroused interest, fun, and challenged students (1981, p. 62). Kohlberg identified children's need of discussion of moral dilemmas so to have exposed different values each held (1981, p. 11). He differentiated each of our "own bag" with regard to moral character (Kohlberg, 1981, p. 9).

Authentic case studies fostered storytelling and elaborated critical aspects and characters. When students wrote of reactions and decisions, class discussion followed based on their ideas and alternative meanings (Byrne, 2012; Cagle & Glasgo, 2008; Clarkeburn, 2002; Dean &

Beggs, 2006; Maclagan & Snell, 1992; McQueeney, 2006, p. 159; Schmidt, McAdams, & Foster, 2009; Sims & Felton, 2005; Sims & Sims, 1991; Sinha, et al., 2007; Smith, 1993). Students acquired multiple perspectives and improved upon moral intuition after they read case studies (Schmidt et al., 2009, p. 331).

Kohlberg identified role playing as moral musical chairs (1981, p. 199). Mixing jobsite roles and industrial scenarios were beneficial and popular among students (Alpay, 2013; Zucker, 2009). Utilizing different delivery methods such as media, simulations, and professional guest speakers were effective (Schmidt et al., 2009; Siller et al., 2009; Swanson, 2004), and mixing lectures, cases, discussions and experiential learning (Sims & Felton, 2005, p. 38). Students benefit from exposure to leaders of industry (Siller et al., 2009).

Availability of Authentic Case Studies

There was a lack of authentic case studies (El-Zein et al., 2007; Sims & Felton, 2005, p. 33; Sinha et al., 2005, p. 292; 2007; Stanwick, 2010). Fictional studies had been different from authentic situations as presented to managers in real life, not as real-world problems (Trevino, 1992, p. 454). Studies recognized few "off-the-shelf" problems based on fictional scenarios and identified effective problems having been expensive to develop for tight educational budgets (El-Zein et al., 2007, p. 177). Byrne stated fictional cases often had included oversimplified problems (2012). Students perceived ethical classroom discussions as being unrealistic (McQueeney, 2006, p. 158). As of 2008, there was no textbook on engineering ethics (King et al., 2008, p. 17). Almost a decade later *Engineering Ethics Real World Case Studies* was published (Starrett et al., 2017). It included civil engineering examples, not CM. The case studies had general themes without specific details.

Conclusion of Literature Review

Accreditation boards and industry organizations recommended ethics instruction in undergraduate CM programs. The number of academic peer-reviewed articles found on ethical decision making in construction was eight; three of these included case studies. A single text book had been published. Engineering schools were "quite serious" about emphasizing ethics education while construction schools had yet to recognize the importance (Jackson, 2000, p. 40).

Literature indicated not much has changed in two decades. Engineers designed while construction managers managed finances and the processes of building. Costs of unethical activity to construction was great. Themes such as "everybody does it" and "look the other way" surfaced in construction related literature, surveys, and press releases. A view held by some construction managers was organizations cannot be both ethical and profitable. These themes along with a concept of unique pressures appeared to some as justification to have made unethical choices.

Ethical decisions were sometimes difficult and require courage. Many times bad choices began as small issues and then became big problems. Authentic case studies were effective in informing students and instructors of unethical choices made by individual managers. It was sometimes difficult to decide what they ought to do. Full context of situations were critical for informed decisions as construction managers were leaders on projects and organizations.

CHAPTER 3: STUDY DESIGN AND METHODOLOGY

This study sought feedback on how to improve effectiveness of two example case studies. The study design included two aspects. First, analysis of perspectives held by CM instructors on ethical decision making. Second, authoring 20 authentic case studies including a framework promoting analysis and research. For this study, cases were used as a tool contributing to students' decision making. After reading a case, individuals may discuss, role play, and interact with others on merits of alternative decisions.

Framework for Study

Identified with a lens of an experienced pragmatic construction manager, the framework was to inform interested learners by applying findings through inquiry (Creswell & Plano-Clark, 2011). The researcher's voice was one of a passionate leader who received minimal ethical decision-making instruction as an undergraduate in an accredited CM program. Objective observation and measurement of occurrences in the current CM learning environment was used (Creswell, 2003).

Kohlberg identified a pragmatic epistemology; process of thinking in research and statistics as avenues to having made decisions based on incomplete data with cognitive-developmental construction of thought processes for a problem solving approach (1981, p. 63). Kohlberg's 6 stages of development included law and order prior to social contract. Do construction managers make decisions to avoid punishment in their own self interest, or based on universal ethical principles? This study presented insights of decision making in construction.

Study Design

The design consisted of two parts; a survey of CM instructors and development of 20 authored case studies which were informed by findings. The survey consisted of 5 parts; investigation of views on teaching ethical decision making, and the capture of views on case study use and effectiveness.

Research Questions

The following research questions were addressed from perspectives of CM instructors in accredited American Council for Construction Education (ACCE) CM programs.

1. How do instructors perceive their role and/or responsibility of educating undergraduate students on ethical decision making in commercial construction?
2. How do instructors perceive ethical decision-making content of undergraduate CM programs at their institution?
3. Do instructors use case studies to teach? Do they use them to teach ethical decision making? If so, how are they being used?
4. Are there differences among instructors using case studies based on years of teaching?
5. What criteria do instructors identify for selection of effective, different, and topical case studies?

Construction Management (CM) Instructor Survey

The survey consisted of 40 questions and a case study. Selected case studies were used as examples to assess for potential use. Derived from literature, survey items were based on prior studies on ethics for entry level teaching (Maxwell et al., 2016). An independent variable of number of years teaching in CM program was grouped as less than 1 year, 1 year or more, less than 5 years, 5 years or more, less than 10 years, 10 years or more, less than 20 years, and more than 20 years.

Refer to survey in appendix C; Survey and Data Collection Packet. Part 1 included general questions that addressed ethics, education, instructor role, background of participants and specific information about teaching. Background included classes taught, years of teaching, construction field experience, techniques, and criteria considered important. Questions included specific information from literature inquired of content familiarity. Part 2 was based on ethical decision-making instruction if case studies were effective, instructors' role, and qualifications. Part 3 consisted of ethical decision-making coursework. Part 4 included case study instruction. Part 5 sought feedback on example.

Responses of level of agreement were measured by Likert scale that included 5 levels from "strongly agree" to "strongly disagree". Refer to Table 1 and 2 for variables and statistics. Table 1 detailed CM instructors' survey content; item, variable and type, and relevant statistic. Table 2 included a summary of research questions and grouping variables.

Content emulates *A Five-Country Survey on Ethics Education in Preservice Teaching Programs* (Maxwell et al., 2016) included in a survey modeled by Glanzer and Ream in 2007. Content had been developed over years and had been presented to doctoral students and graduates in a Colorado State University weekly advising sessions in February 2021, August 2020, and November 2019. Survey reliability was reinforced by reviews for inconsistencies or anomalies.

The following definition of case study was included in the survey:

> Stories used in courses to challenge students to learn principles and present solutions to authentic problems. They may include homework. An example would be if a supervisor asks a subordinate to do something they know to be against policy. The case study would

identify people involved and the issue to promote thought-provoking discussion and analysis.

Table 1

CM Instructors' Survey Content on Ethical Decision Making

	Survey Item	Variable	Type	Statistics
Part 1	General			
A	What is your area of teaching? Please answer all applicable. 1. Estimating 2. Scheduling 3. Project management 4. Field management 5. Laboratory 6. Other: _____	Teaching Area (AREA)	Categorical Independent	Descriptive
B	How many years have you taught CM courses? Please choose only one. 1. Less than 1 year 2. 1 year or more and less than 5 years 3. 5 years or more and less than 10 years 4. 10 years or more and less than 20 years 5. More than 20 years	Years Teaching (YEAR)	Categorical Independent	Descriptive
C	Do you have at least 5 years of full-time project management or superintendent experience in construction?	Field Experience (FEXP)	Dichotomous Independent	Descriptive
D	Does your program require a standalone ethics course for undergraduate graduation?	Standalone Required (SREQ)	Dichotomous Independent	Descriptive
E	Does your program include CM instructors teaching ethical decision making directly to students?	CM Teach (CMET)	Dichotomous Independent	Descriptive
F	Please indicate the techniques you use to teach ethical decision making. Please answer all applicable. 1. Case study 2. Role Play 3. Lecture 4. Discussion 5. Workshop 6. I do not teach ethical decision making 7. Other, please identify _____	CM Techniques (CMTQ)	Categorical Dependent	Descriptive

G	Please indicate criterion you feel most important to be effective in teaching ethical decision making in construction. Please choose only one. 1. Actual Events 2. Relevant 3. Believable 4. Not simplistic/Not sugar-coating potential real industry issues 5. I do not feel case studies are effective for this subject.	CM Criterion (CMCR)	Categorical Dependent	Descriptive
H	Please indicate if you perceive construction as having an "everyone does it" or "everybody's doing it" attitude with regard to ethical transgressions.	Everyone does it (EVDI)	Dichotomous Dependent	Descriptive
I	Please indicate if you perceive ethical transgressions to be "systemic" in construction.	Systemic (ESYS)	Dichotomous Dependent	Descriptive
J	Please indicate if you perceive construction as having "unique pressures" leading some managers to make unethical decisions.	Unique Pressures (UNQP)	Dichotomous Dependent	Descriptive
K	In what geographic region of the United States do you perceive most ethical transgressions in construction take place? 1. Pacific Time Zone 2. Mountain Time Zone 3. Central Time Zone 4. Eastern Time Zone 5. Hawaii 6. Alaska 7. I don't think there is a difference 8. I have no idea	Geographic Region (GEOR)	Categorical Dependent	Descriptive
Part 2	Ethical Decision-Making Instruction			
1	Ethics is too personal and subjective to be taught as part of CM education.	Difficult (DIFF)	Scale Dependent	Descriptive
2	Ethical decision-making courses have a significant effect on students' professional development as construction managers.	Effective (EFFE)	Scale Dependent	Descriptive
3	I consider it my role to teach students on topics involving ethical decision making in construction.	Responsibility (RESP)	Scale Dependent	Descriptive

4	Professional role models (colleagues, supervisors, etc.) have a significant effect on students' ethical decision-making development as construction managers.	Role Model (ROLE)	Scale Dependent	Descriptive
5	As a professional, I consider myself qualified to teach aspects of ethical decision making in construction.	Qualification (QUAL)	Scale Dependent	Descriptive
Part 3	Ethical Decision-Making Coursework			
6	The content of courses on ethical decision making in our CM program is adequate.	CM Adequate (CMAD)	Scale Dependent	Descriptive
7	At least one introductory ethical decision-making course should be mandatory for all students enrolled in our CM program.	Standalone (STAN)	Scale Dependent	Descriptive
8	Ethical decision making is an important aspect of a CM program at an institution.	Important (IMPO)	Scale Dependent	Descriptive
9	Students are taught adequately about ethical decision making in classes outside of our CM program.	Non CM - Adequate (NCMA)	Scale Dependent	Descriptive
Part 4	Case Study Instruction			
10	Case studies are an effective instructional tool.	CS Effective (CSEF)	Scale Dependent	Descriptive
11	I use case studies as an instructional tool.	CS Use (CSUS)	Scale Dependent	Descriptive
12	I use case studies to teach ethical decision making.	CS Use Ethics (CSUE)	Scale Dependent	Descriptive
13	Case studies to teach ethical decision making are readily available.	CS Available (CSAV)	Scale Dependent	Descriptive
14	Authentic case studies to teach ethical decision making are readily available.	CS Authentic (CSAU)	Scale Dependent	Descriptive
Part 5	Feedback on Example Case Study			
15	Case study is easily understood by me.	Example Understood (ECSU)	Scale Dependent	Descriptive
16	Case study would be easily understood by students.	Example Understood Students (ECSS)	Scale Dependent	Descriptive

17	Case study could be improved upon.	Example Improved Upon (ECSI)	Scale Dependent	Descriptive
18	Case study is an effective instructional tool to present an ethical decision-making lesson in class.	Example Effective (ECSE)	Scale Dependent	Descriptive
19	I would use case study as an instructional tool on ethical decision making to students.	Example Instructional Tool (ECST)	Scale Dependent	Descriptive
20	Please specifically indicate what you would improve upon case study.	N/A	N/A	N/A
21	Please specifically indicate how you would use this case study.	N/A	N/A	N/A
22	What do you think of the case study?	N/A	N/A	N/A
23	Please indicate your specific process for reviewing case studies, if applicable.	N/A	N/A	N/A
24	Please indicate the institution where you teach.	Institution (INST)	Nominal Independent	Descriptive
25	Please indicate the choice best describing your position.	Position (POSN)	Categorical Independent	Descriptive
26	Please indicate your gender.	Gender (GNDR)	Categorical Independent	Descriptive
27	Please indicate the state where your primary institution is located.	State (STAE)	Nominal Independent	Descriptive

Pilot CM Instructor Survey

A pilot survey was distributed to three institutions prior to all 72 ACCE accredited CM programs. Schools were chosen based on geographic location and less than 15 instructors each. Feedback was used to improve content and distribution; clarity and potential modifications. Spring semester 2021 was the schedule lasting about two weeks. The pilot resulted in modifications included in areas of teaching categories added, as well as distribution methods such as notification letters amended. The pilot contributed to the success of the study.

Example Case Studies

Procurement Credits was an example of systemic fraud and bid rigging. In this instance the procurement department of a large organization utilized client funds to finance other projects and political contributions. *Illegitimate Costs included in Proposed Change Order (PCO) ESPA* detailed decisions made by upper management including illegitimate costs resulting in reactions by different managers and client. One case study was included with each survey, see attached Appendix E.

Authored Case Studies

The authentic case studies included current ethical dilemmas for readers to look inward at their decision-making process. Topics were selected based on literature and the investigator's multi-decade career. Public and private projects provided authentic dilemmas (Siller et al., 2009, p. 105). Case study topics involved financial issues such as billing, bidding, processing of change orders, conflict of interest, personal and corporate accountability, safety, environmental concerns, Covid-19, and processing of time and material tickets, etc.. Respect for individuals, quality of work, collusion, and the repercussions were included. Authored case studies were intended to assist CM students in developing a consciousness of consequences (Dean & Beggs, 2006, p. 23) of decision making.

To learn from case studies students were expected to perform research and find topical articles. Views reached matched with philosophic concepts (Stake, 1995), followed by mapping patterns of similar incidents found (Yin, 1994: Zucker, 2009). A journal could be kept by students (Emerson et al., 2011; Schatzman & Strauss, 1973) to document thoughts and reactions. Teaching aids in the form of flow diagrams of processes were included in Appendix D – *Teaching Aid Packet*, established a project timeline life cycle for reference.

Survey Participants

Approximately 1,000 construction educators at 72 ACCE accredited baccalaureate CM programs across the United States were provided an opportunity to complete the survey. The researcher assumed construction educators contacted would consider the subject of ethical decision making in construction important.

Instructors' email contact information had been gathered via manual review of institutions' websites. Developing this listing of instructors of ACCE accredited CM instructors proved a beneficial activity. Over the course of many days the researcher reviewed each of the 72 websites and manually typed the name, title, email address, and telephone number of each instructor. Search terms of websites included "Construction Management Faculty". A review of the program website displayed the array of CM programs, some included two, some 30 instructors or more. Interesting points such as the University of California websites were completely different was learned. A PDF of the program description was saved. Developing this listing was a very important aspect of this research study and provided a connection to the CM education community.

Criteria for instructors to be included in the listing were as follows.

- A ".edu" email address is required for the instructor.
- Exclude math, interior design, civil engineering instructors, architecture faculty, unless listed specifically under CM instructors.
- Exclude academic advisors; administrative assistants.
- Include construction engineering instructors if "construction" was in title.

Data Collection

An information letter was forwarded with notification, followed by an email invitation and link. Addressing the instructors personally via listed emails may have contributed to a higher response rate (Maxwell et al., 2016, p. 139). Researchers found when they forwarded surveys to directors of programs for distribution not effective (Jackson, 2000, p. 44), so the researcher contacted each instructor individually. In 43 days reminders were sent three times to non-respondents.

Timetable of data collection for *Commercial Construction Ethical Decision Making: Instructor Perspectives*; Spring semester 2021.

- April 14, 2021: Pilot Study time period of 14 days begins.
- April 29, 2021: Information Letter/Invitation to Participate.
- May 4, 2021: Survey link and letter requesting participation.
- May 11, 2021: Reminder.
- May 18, 2021: Second reminder.
- June 1, 2021: Third reminder.
- June 9, 2021: Thank you letter.
- June 15, 2021: Survey time period of 43 days expired.
- June 1, 2021: Analysis.

Data Collection Method – Quantitative Survey and Two Example Case Studies

Anonymous non-random surveys were distributed via Qualtrics directly to individual CM faculty with a case study. Based on geographic region, one of two example cases were included. *Procurement Credits* was sent to the western part of the U.S. and *Illegitimate Costs Included in Proposed Change Order (PCO) ESPA* east, with number of instructors being approximately equal.

A final question asked if the instructor was open to contact for follow up and best method to do so. Following data analysis the researcher determined follow-up conversations would not contribute to the study.

Data Management and Analysis

See Appendix C – *Survey and Data Collection Packet*. Data were accessed as surveys returned, then east and west data combined into an excel spreadsheet and entered into SPSS (Statistical Package for Social Sciences). Data was then reviewed for normal distribution as appropriate. Descriptive and inferential statistics detailed demographic information of trends and anomaly. Scores were grouped as listed in Table 2; Summary of Research Questions and Grouping Variables.

Table 2

Summary of Ethical Decision-Making Research Questions and Grouping Variables

RQ	Questions	Grouping Variables	Statistics	Grouping Variables
1	How do instructors perceive their role and/or responsibility of educating undergraduate students on topic of ethical decision making in commercial construction?	DIFF, EFFE, RESP, ROLE, QUAL	Descriptive	EDMI (Table 12)
2	How do instructors perceive ethical decision-making content of undergraduate CM program at their institution?	CMAD, STAN, IMPO, NCMA	Descriptive	EDMC (Table 13)
3	Do instructors use case studies to teach ethical decision making? If so, how are case studies being used?	CSEF, CSUS, CSUE, CSAV, CSAU	Descriptive	CSI (Table 14)
4	Are there differences among instructors using case studies based on years of teaching?	YEAR, CSUS, CSUE	Descriptive, One-way ANOVA	ANOV (Table 18)
5	What criteria do instructors identify for selection of effective, different, and topical case studies?	CSEF, CSUS, CSUE, CSAV, CSAU	Descriptive	CRPM (Table 14)
		EVDI, ESYS, UNQP	Descriptive	IPTF (Table 11)
		ECSU, ECSS, ECSI, ECSF, ECST	Descriptive	CSF (Table 16 & 17)

Scoring for each of the different categories of the Likert scale were reported. The means and standard deviation provided a common measure for analysis. Findings were reviewed to see if they made sense (Zucker, 2009). A one-way ANOVA test was used to determine significance. Significant differences among groups were investigated comparing years of teaching and use of case studies, and then years as a project manager or superintendent and use of case studies.

Development and Authoring Case Study Framework

1. Title of case study – Identified topic.
2. Background – Provided project details; setting, cost, schedule, and other information.
3. Team – Identified project participants as to job title, role, and organizational authority.
4. Case details – Provided information relevant for analysis.
5. Discussion items, questions for students, and research assignment – Included items fostering discussion and specific questions to address reaching a decision.
6. Instructors' information – Supplemental to help use case as a learning tool. This should not be made readily available to learners. Based on CM instructor feedback, this included the outcome of the dilemma (i.e., what actually happened).

Framework for Using the Case Study

Steps included in the implementation of case studies as a learning methodology were identification, research, and analysis. The instructor could emphasize importance of a journal for students to capture their thoughts, feelings, and reasoning. A brief explanation of ethical theories and moral evaluation models were presented prior to students having been asked to experience framework steps. Figure 7 included steps students could follow in evaluation of their decision-making processes. Students compared analysis in small groups; discussion provided an avenue for exploration of different points of view and decisions made. Agreement may not have been reached as students developed and eventually learned to substantiate their decisions. Students provided summaries of decision-making exploration.

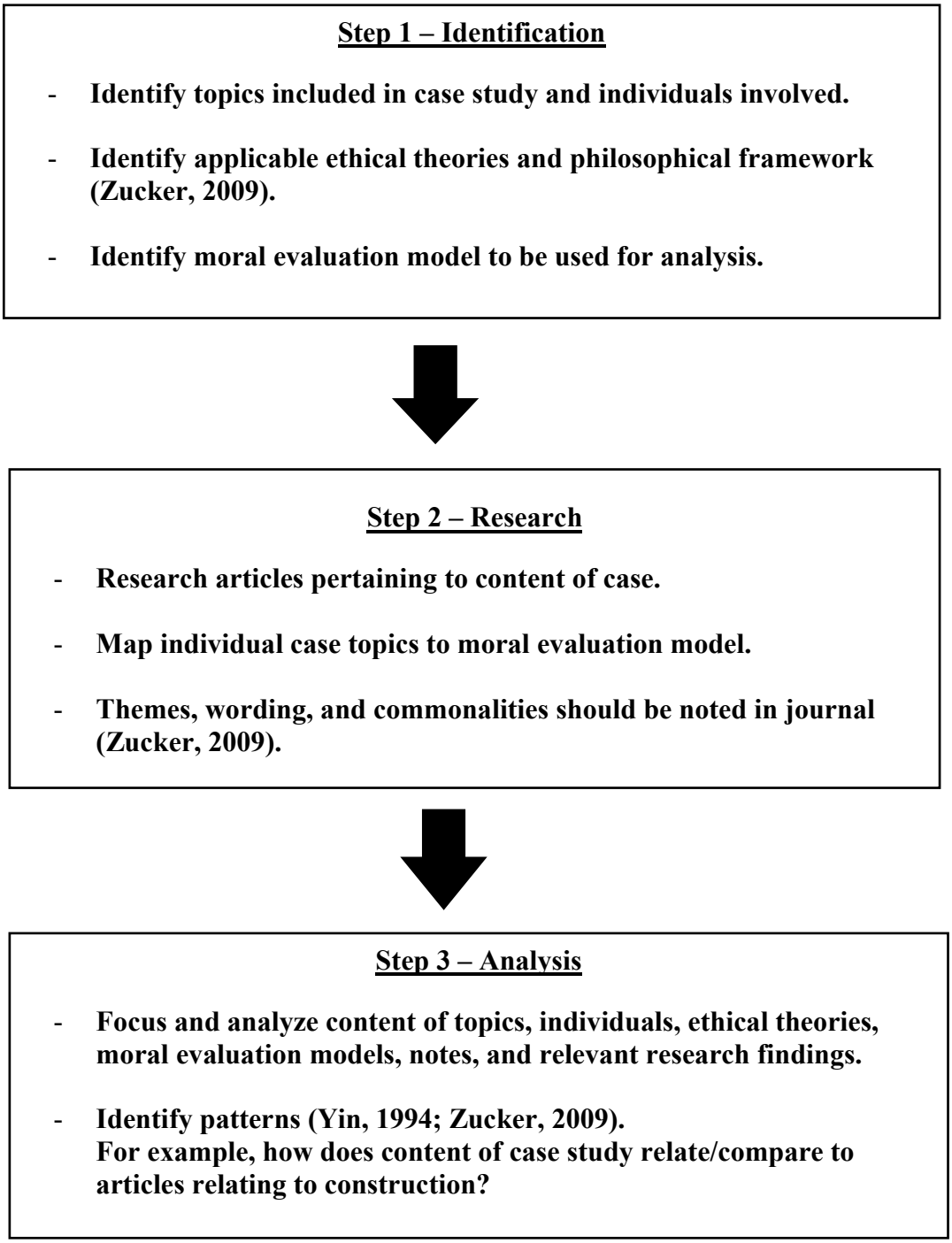

Figure 7

Framework Steps of Identification, Research, and Analysis for Using the Case Study

Teaching Aids

See six teaching aids (Appendix D) as summarized in Table 3. The content listing of articles and press releases provided reference information. When reviewing cases and press reports these tools set the scene, expectations, and relationships.

Table 3

Summary of Teaching Aids Provided by Author for All Case Studies

#	Teaching Aids	Descriptions
1	Stakeholder Organization Chart. Appendix D1	This organization chart includes contractual and non-contractual relationships among project stakeholders and team. Including end user, owner/client, program manager, design team, general contractor, construction manager, subcontractors, and permitting/code enforcement officials.
2	Case Analysis Decision Model. Appendix D2	This decision tree includes a process of decision making that may be considered when analyzing cases and making decisions on a project.
3	Flowchart from Project Inception to Completion. Appendix D3	This flowchart includes project process from inception to completion. The chart details general milestones, aspects of confidential information, and who has access to it.
4	Flowchart from Project Kickoff to Completion. Appendix D4	This flowchart includes process of a project from kickoff to turnover to owner. Specific milestones and key decision areas are identified. The detail of this chart presents a view of many decisions made by construction managers during a project.
5	Flowchart of Change Order Process. Appendix D5	This flowchart includes process of change order management. Change order processing is an area of very subjective decision making on a project.
6	Forces on a Construction Managers' Decision Making. Appendix D6	This diagram details different forces managers face when making decisions. A sphere of context, courage, fidelity, and integrity shape decision making. Attachments, personal relationships, contractual obligations, laws and societal/industry norms are all forces impacting the process.

CHAPTER 4: FINDINGS

Introduction

This inquiry explored case study use by CM instructors as a tool to teach ethical decision making and received feedback. Authentic case studies have been developed and refined based on findings. Quantitative data were analyzed with use of descriptive analysis. Inductive coding identified categories for enhanced effectiveness.

The findings presented in this chapter were organized as follows.

1. Response rate, sample size, and specific information on participants.
2. Perspectives of ethical decision-making instruction and themes in literature.
3. Perspectives of case study use and effectiveness.

Participants and Response Rate

A survey link was distributed to instructors at 72 American Council for Construction Education (ACCE) institutions with an example case study. *Costs Included in Proposed Change Order* was distributed to the eastern U.S., *Procurement Credits* to the west.

As indicated in Table 4, response rate for the east was 8.72%, and 7.35% for the west. An overall response rate of 8.12% was achieved with an n of 78 surveys completed of 961 distributed. Some were not answered completely and results were still included.

Table 4

Survey Distribution and Responses from CM Instructors

Survey	East	West	Total
Invitations (n)	562	434	996
Emails Rejected (n)	21	11	32
Survey Count Adjustment [a] (n)	2	1	3
Sample Size (n)	539	422	961
Surveys Started (n)	62	40	102
Surveys Responded To (n)	47	31	78
Response Rate (%)	8.72	7.35	8.12
Completion Rate (%)	75.81	77.50	76.47

[a] East: No longer in program/ Doesn't teach CM.
West: Doesn't teach CM although listed as a CM teacher.

As indicated in Table 5, instructors varied from numerous positions; department chair to assistant professor. Assistant, associate, and professors represented most responses.

Table 5

Positions of Responding CM Instructors

Positions	n	%
Assistant Professor	13	21.67
Associate Professor	11	18.33
Professor	9	15.00
Instructor	8	13.33
Lecturer	6	10.00
Adjunct Faculty / Part-Time Faculty	5	8.33
Department Chair / Head	3	5.00
Faculty	1	1.67
Other	4	6.67
No Response	18	
Total	78	

Areas of instruction varied throughout construction coursework as indicated in Table 6. Multiple answers were permitted from each instructor. Courses such as construction law, materials, surveying, dispute resolution, contracts, and ethics were identified as other.

Table 6

Areas of Teaching of Responding CM Instructors

Areas of Teaching	n
Project management	34
Field management	23
Estimating	21
Scheduling	21
Safety	14
Environmental topics	9
Laboratory	9
Other	28

Years of teaching experience varied from less than a year to more than 20 years as indicated in Table 7. Over 61% of the instructors taught for less than 10 years.

Table 7

Instructors' Number of Years Teaching CM

Time Periods	n	%
Less than 1 year	2	2.99
1 year or more and less than 5 years	15	22.39
5 years or more and less than 10 years	24	35.82
10 years or more and less than 20 years	13	19.40
More than 20 years	13	19.40
No Response	11	
Total	78	

Gender was predominantly identified as males with 44, and nine females. A ratio of nearly five male to one female, six preferred not to respond, the remainder did not answer.

Instructors having at least 5 years full-time project management or superintendent experience in construction were 54 (Yes) and 22 (No).

Nearly half (32) of the 72 ACCE institutions had instructors who responded. For the statement "Please indicate the state where your primary institution is located", the top five states included Texas with eight, Colorado with five, and Alabama, California, and Michigan each had four.

For the statement "Please indicate if you are open to being contacted to share/discuss ethical decision making in CM and/or using case studies. The researcher welcomed the opportunity"; 23 answered yes and provided their contact information, and 36 no. Findings from data provided were determined adequate for the accomplishment of study goals. After consultation with advisor, follow-up interviews would not have contributed and did not occur.

Perspectives of Ethical Decision-Making Instruction and Themes Found in Literature

Techniques used by instructors were composed in Table 8. Discussion and lecture represented the most responses, case studies followed. Instructors who did not teach ethical decision making were 11.50% of the sample.

Table 8

Techniques CM Instructors Use to Teach Ethical Decision Making

Techniques	n
Discussion	54
Lecture	53
Case study	48
Role play	19
I do not teach ethical decision making	9
Workshop	2
Other [a]	6

[a] "Readings" / "I have the students choose one of three selected research papers relating to ethics in construction estimating, and write a 2-page summary of the paper. The summary will also include their personal opinions of the paper, and ethics in construction estimating". / "I work into every week's class work".

Most instructors agreed the eastern time zone had most ethical transgressions. Professional role models had impacts on students' ethical decision making development, and instruction was the instructors' role for which they felt qualified. Ethics instruction was effective, not too personal to teach, and a course on decision making should have been mandatory.

Case study instruction was effective and responses favored the examples provided, although most agreed improvement was needed. Instructors agreed case studies were not readily available. Unique pressures were present in the construction industry however respondents split if there was an "everyone does it" attitude, and if transgressions were "systemic" responses varied minimally.

One statement "Ethics is too personal and subjective to be taught as part of CM education" was stated in the negative and therefore reverse scored. A mean of 4.56 resulted and standard deviation of .82.

"Do CM instructors teach ethical decision making?" reported the least variability as most responded they did. Standalone courses were not a requirement of most CM programs. Instructors consistently responded the example case studies needed improvement.

CM instructors responded that they taught ethical decision making; 63 yes, 13 did not. Most instructors (61) responded there was not a standalone ethics course requirement with 14 yes; a ratio of more than 4 to 1, as per Table 9.

Table 9

CM Instructors Teaching Ethical Decision Making/
CM Programs Requiring Standalone Ethics Course for Graduation

Survey Items	Yes	%	No	%	No Response	Total
CM Instructors Teaching Ethical Decision Making Directly to Students (n)	63	82.89	13	17.11	2	78
CM Programs Require a Standalone Ethics Course for Undergraduate Graduation (n)	14	18.42	61	80.26	3	78

Instructors identified the eastern time zone of the United States as where most ethical transgressions took place (41.18%), then Central time zone (10.29%), followed by Mountain and Pacific time zones each at the same value (4.41%). A quarter of instructors replied no difference, nearly 15% had no idea. Alaska and Hawaii time zones had zero values.

Themes found in literature included; presence of "unique pressures", an "everyone does it" attitude, and ethical transgressions as having been "systemic". Most respondents perceived construction as having "unique pressures" by a factor of nearly 2 to 1. Instructors were more

evenly divided on an “everyone does it” attitude with most indicating no. A similar result was reported for “systemic” ethical transgressions with most responding no as per Table 10.

Table 10

CM Instructors’ Perceptions of Themes Found in Literature Review

Themes	Yes	%	No	%	I Don't Know	%	No Response	Total
Construction has "Unique Pressures" Leading Some Managers to Make Unethical Decisions. (n)	46	67.65	18	26.47	4	5.88	10	78
Construction has an "Everyone Does It" or "Everybody's Doing It" Attitude. (n)	29	42.65	32	47.06	7	10.29	10	78
Ethical Transgressions are "Systemic". (n)	26	38.24	31	45.59	10	14.71	11	78

Ethical decision-making education was beneficial, perceived as not too personal to teach, it was their role, and they were qualified. Views identified coursework as having an impact on students’ professional development but not as much as future professional colleagues would have, per Table 11.

Table 11

Ethical Decision-Making Instruction, Role, and Qualifications

Survey Items	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	No Response	Total	Mean	Standard Deviation
Ethics is too personal and subjective to be taught as part of CM education.	47	16	2	2	1	0	68	1.44	0.82
%	69.12	23.53	2.94	2.94	1.47				
Ethical decision-making courses have a significant effect on students' professional development as construction managers.	0	6	10	32	19	0	67	3.96	0.90
%	0.00	8.96	14.93	47.76	28.36				
I consider it my role to teach students on topics involving ethical decision making in construction.	0	1	2	34	31	0	68	4.40	0.63
%	0.00	1.47	2.94	50.00	45.59				
Professional role models (colleagues, supervisors, etc.) have a significant effect on students' ethical decision-making development as construction managers.	0	0	2	23	42	0	67	4.60	0.55
%	0.00	0.00	2.99	34.33	62.69				
As a professional, I consider myself qualified to teach aspects of ethical decision making in construction.	0	1	4	33	30	0	68	4.35	0.66
%	0.00	1.47	5.88	48.53	44.12				

Instructors were divided nearly equally if their CM program courses on ethical decision making were adequate. Replies leaned toward agree and strongly agree with most (41.80%) neutral. Most perceived a course on ethical decision making should have been mandatory, and

students were not being taught adequately outside of their CM program. Over 86% perceived ethical decision making was an important aspect as per Table 12.

Table 12

Ethical Decision-Making Coursework/CM Instructors' View of Program Adequacy

Survey Items	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	No Response	Total	Mean	Standard Deviation
The content of courses on ethical decision making in our CM program is adequate.	2	14	28	19	4	11	67	3.13	0.92
%	2.99	20.90	41.79	28.36	5.97				
At least one introductory ethical decision-making course should be mandatory for all students enrolled in our CM program.	4	13	13	22	15	11	67	3.46	1.21
%	5.97	19.40	19.40	32.84	22.39				
Ethical decision making is an important aspect of a CM program at an institution.	0	2	7	34	24	11	67	4.19	0.74
%	0.00	2.99	10.45	50.75	35.82				
Students are taught adequately about ethical decision making in classes outside of our CM program.	6	23	30	7	1	1	67	2.61	0.85
%	8.96	34.33	44.78	10.45	1.49				

Perspectives of Case Study Use and Effectiveness

Over 91% of instructors identified case studies as effective. Over 83% used them to teach ethical decision making with most indicating lack of availability, as per Table 13.

Table 13

Views of CM Instructors on Case Study Effectiveness, Use, and Availability

Survey Items	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	No Response	Total	Mean	Standard Deviation
Case studies are an effective instructional tool.	1	0	5	33	28	11	67	4.30	0.74
%	1.49	0.00	7.46	49.25	41.79				
I use case studies as an instructional tool.	0	3	8	34	22	11	67	4.12	0.79
%	0.00	4.48	11.94	50.75	32.84				
I use case studies to teach ethical decision making.	3	7	8	29	20	11	67	3.84	1.11
%	4.48	10.45	11.94	43.28	29.85				
Case studies to teach ethical decision making are readily available.	2	23	22	17	3	11	67	2.94	0.95
%	2.99	34.33	32.84	25.37	4.48				
Authentic case studies to teach ethical decision making are readily available.	5	24	19	16	3	11	67	2.82	1.03
%	7.46	35.82	28.36	23.88	4.48				

Case Study Instruction

Case studies based on actual events were most important criteria for effectiveness, relevant subject matter was second per instructor views. Only one instructor perceived case studies as ineffective for teaching ethical decision making as reported in Table 14.

Table 14

Criteria CM Instructors Consider Most Important to be Effective in Case Studies

Criteria	n	%
Actual events	43	56.58
Relevant	20	26.32
Not simplistic / Note sugar-coating potential real industry issues	9	11.84
Believable	3	3.95
I do not feel case studies are effective for this subject	1	1.32
No Response	2	
Total	78	

Example Case Study Feedback

Procurement Credits was distributed to the western states and was easily understood by 70.00% of instructors and 44.00% reported students would easily understand. Improvement was needed as determined by most. Over 79% identified it as an effective instructional tool with over 60% replying they would have used it. Reference findings in Table 15.

Table 15

Procurement Credits Case Study Feedback

Survey Items	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	No Response	Total	Mean	Standard Deviation
Case study is easily understood by me.	0	3	2	12	8	6	31	4.00	0.94
%	0.00	12.00	8.00	48.00	32.00				
Case study is an effective instructional tool to present an ethical decision-making lesson in class.	0	2	3	15	4	7	31	3.88	0.78
%	0.00	8.33	12.50	62.50	16.67				
Case study could be improved upon.	0	0	8	14	2	7	31	3.75	0.60
%	0.00	0.00	33.33	58.33	8.33				
I would use this case study as an instructional tool on ethical decision making to students.	2	1	6	11	3	8	31	3.52	1.06
%	8.70	4.35	26.09	47.83	13.04				
Case study would be easily understood by my students.	3	2	9	10	1	6	31	3.16	1.05
%	12.00	8.00	36.00	40.00	4.00				

Costs Included in Proposed Change Order was distributed to eastern states with nearly three quarters considered it easily understandable and most reported students would have easily understood. Improvement was needed as determined by 61.12%. Nearly 73% identified it as effective with almost 65% responding they would have used it. Reference findings in Table 16.

Table 16

Cost Included in Proposed Change Order Case Study Feedback

Survey Items	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	No Response	Total	Mean	Standard Deviation
Case study is easily understood by me.	0	4	5	21	7	10	47	3.84	0.85
%	0.00	10.81	13.51	56.76	18.92				
Case study is an effective instructional tool to present an ethical decision-making lesson in class.	1	1	8	21	6	10	47	3.81	0.83
%	2.70	2.70	21.62	56.76	16.22				
I would use this case study as an instructional tool on ethical decision making to students.	1	1	11	19	5	10	47	3.70	0.83
%	2.70	2.70	29.73	51.35	13.51				
Case study could be improved upon.	0	1	13	20	2	11	47	3.64	0.63
%	0.00	2.78	36.11	55.56	5.56				
Case study would be easily understood by my students.	2	7	6	19	3	10	47	3.38	1.05
%	5.41	18.92	16.22	51.35	8.11				

Analysis of Variance

SPSS was used to perform Analysis of Variance (ANOVA) as reported in Table 17. No significance was reported with an independent variable of years of teaching and dependent variable use of case studies, or for use teaching ethical decision making.

No significance was reported with an independent variable of 5 years or more of project management or superintendent experience and dependent variable use of case studies, or for use teaching ethical decision making.

Table 17

Analysis of Variance for Use of Case Studies and Years of Teaching and Industry Experience

Survey Items	Sum of Squares	df	Mean Square	F	Sig.
Years of Teaching - Independent Variable					
I use case studies as an instructional tool.					
Between Groups	1.16	4	0.29	0.45	0.77
Within Groups	39.89	62	0.64		
Total	41.05	66			
I use case studies to teach ethical decision making.					
Between Groups	4.23	4	1.06	0.85	0.50
Within Groups	76.97	62	1.24		
Total	81.19	66			
Five Years of Full-Time Project Management or Superintendence Experience - Independent Variable					
I use case studies as an instructional tool.					
Between Groups	0.62	1	0.62	0.99	0.32
Within Groups	40.43	65	0.62		
Total	41.05	66			
I use case studies to teach ethical decision making.					
Between Groups	0.07	1	0.07	0.06	0.81
Within Groups	81.13	65	1.25		
Total	81.19	66			

Qualitative Analysis

The following categories of areas of improvement of example case studies resulted from inductive analysis. For *Costs Included in Proposed Change Order*, Tables 18 – 20 included instructor feedback. Content, format, complication level, and length were identified as improvement areas. Shortening of the length, simplification to a single less complicated issue, and creation of more of a story as indicated in Table 18. Class discussion, assignment,

homework, course project, and lecture were methods used as per Table 19. An estimating or project management class was highlighted as a forum that used techniques such as work groups and role play. Of the 19 responses over 63% identified *Costs Included in Proposed Change Order* as favorable with terms such as "very good", "informative and useful", and "I like it". Unfavorable responses numbered five with "too long" and "worthless" noted, as per Table 20.

For *Procurement Credits*, Tables 21-23 included instructor feedback. Content, complication level, and format were areas of improvement needed. "Too many unethical issues" and "simplify" were responses as per Table 21. Class discussion, lecture, and write-up were methods used as per Table 22. Estimating was highlighted as a good course for use of this example. Of the 13 responses, over 69% identified *Procurement Credits* as favorable with terms such as "very good", "really good", "clear", and "interesting". Unfavorable respondents numbered three with "terrible" and "too much irrelevant info" were responses as per Table 23.

Table 24 identified specific processes instructors reviewed, created from experience, group presented, and discussed in class. Real, actual events, and targeted issues were important. "I am not proud of some of my choices", one wrote noting of their own experiences used in the creation of scenarios. Group presentations consisted of four or five students. Whether it was followed by a lecture, worked in groups, or presented, instructors identified class discussion as a technique.

Content, complication level, and length were identified in both examples as improvement areas. Class discussion, lecture, assignment, homework, course project, and write-up were techniques identified as used. For both examples, over 65% replied the example was useful.

Table 18

Costs Included in Proposed Change Order Improvement Areas Identified

	Categories			
Survey Items	Content (10)	Format (6)	Complication Level (5)	Length (5)
Where would you improve this case study?	"Having different sections"	"Present in a single issue"	"start small"	"Narrative should be shorter in length"
	"asking the students to identify the types of ethics"	"Add more information"	"Simplify"	"5 pages"
	"very dense"	"Use clearer and precise Language"	"questions seem too complicated"	"Too long"
	"supplemental documents"	"Ease of viewing and flow"	"complicated"	"reduce the length"
	when their job, etc may depend upon"	"Simplify single issue"	"too involved for most undergraduate students"	"Make it shorter"
	"Simplify the number of team members"	"Present as an actual SOV"		
	"more story-like and less terse"	"Provide a comparitive matrix"		
	"remove many of the acronyms"			
	"what the abbreviations mean"			
	"blatant unethical gc's"			

Table 19

Costs Included in Proposed Change Order Used Identified

	Categories				
Survey Items	Class Discussion (4)	Assignment (3)	Class (2)	Homework (2)	Course Project (2)
How would you use this case study?	"Class Discussion"	"have them read and then answer", ,	"estimating class"	"homework assignment"	"course project"
		"their decision pro-ethics or not…state their decision with explanation of how they reached it"	"PM class"	"take home test question"	"good for a semester long class…end of the semester wrapup"
		"Assignment maybe"			

Table 20

Costs Included in Proposed Change Order Overall Impression

Survey Items	Categories		
	Favorable (12)	Unfavorable (5)	Neutral (2)
What do you think of this case study?	"Content was good"	"remove the extraneous information"	"presents some interesting issues but the presentation and sentence structure could be improved to convey the meaning more clearly"
	"It's pretty good"	"Students would not have time to do it in class and I doubt they will read it entirely"	"bit difficult to keep track of the $'s"
	"good representative of a typical problem"	"I'm not going to read the 5 page case study"	
	"very good instrument for graduate students"	"worthless"	
	"Informative and useful"	"too long"	
	"well developed"		
	"fairly common scenario"		
	"adequate"		
	"Good"		
	"decent"		
	"I like it"		
	"It's ok"		

Table 21

Procurement Credits Improvement Areas Identified

	Categories			
Survey Items	Content (9)	Complication Level (2)	Format (2)	Method of Instruction (2)
Where would you improve this case study?	"explanation/write-up seems good", "dialogue was good…pare it down a little", "content is good", "too much info", "ethical issues appear to be obvious", "revised situation (showing how the money was pulled from one project to another) would help students grasp how the money from one project is being spent on another", "avoid topics relating to politics", "too many unethical issues", "what you mean by procurement credits"	"tough for lower-division students", "Simplify"	"Discussion Items/Questions …should be at the front", "Reformat"	"discussed in classes", "guest speakers"

Table 22

Procurement Credits Uses Identified

Survey Items	Categories Class Discussion (4)	Lecture (4)	Class (2)	Homework (1)
How would you use this case study?	"in-class discussion"	"Demonstrate what bid shopping is, collusion, etc."	"estimating (junior-level)"	"homework reading assignment"
	"General discussion"	"I would use this as an example of how companies could abuse trust of a client…on one project from another"	"would use it in my estimating course"	
	"Our program does not have a dedicated Ethics class, rather faculty are charged with infusing ethics into each course so that it can be discussed from the perspective"	"normal lecture"		
		"useful after explaining different ethical issues in construction"		

Table 23

Procurement Credits Overall Impression

	Categories		
Survey Items	Favorable (9)	Unfavorable (3)	Neutral (1)
What do you think of this case study?	"good case study"	"Terrible"	"it's really uncommon for all of these ethical dilemmas to be concurrently layered on top of one another. Speaking to each of them individually would help with clarity I think"
	"interesting and relevant I also like the dialog"	"Too many details"	
	"clear examples"	"Too much irrelevant info"	
	"interesting"		
	"Very good"		
	"It is really good. I would definitely use it in my class"		
	"I believe it is good"		
	"good case study"		
	"Great sources"		
	"Good"		

Table 24

Survey East and West – CM Instructors' Specific Process for Reviewing Case Studies

Categories	Number of Responses	Responses
Instructor Review	8	"1. Is it real 2. Does it make sense to students who do not have the requisite experience 3. Is it solvable"
		"I would want them to be obvious to me so that I could point them out and solicit discussion."
		"1. I read it and determine if I have any issues with the language and concepts. 2. I then try to evaluate it in regard to the students' reading abilities and grade levels."
		"Actual event involving CM, sufficient information available but not too many details"
		"read them and then think about which courses they could be applied"
		Evaluate if they are targeted at points of interest I want to communicate.
		"I read the case study from top to bottom."
		"read them and see if they will work"
Create from Experience	5	"I struggle finding construction industry case studies on-line. I create them from my experience."
		"I have been in the construction industry for 35 years, so I feel my ethical lapses, spoken plainly to the students in the first person, have much more applicability than large case studies that make people look like there is an obvious decision. I am not proud of some of my choices, but when put into context, they quiet the room more than something out of a book."
		"I usually have an initial issue and then provide additional information as the small group works through the thought process."
		"While reading any case study I am continually reflecting on my experiences during the 30 years I spent in commercial construction."
		"I use case studies from my own 40 plus years as a construction owner representative for two huge government agencies."
Group Presentation	3	"Split the class into groups of 4-5 students. Give the case study to the students a week ahead of class. Ask each group to read and analyze the case before coming to class. Assign different questions to different teams. Ask them to prepare a presentation of say 5-10 slides with their analysis of the questions for their group. Ask each group to present their analysis/findings in class"
		"I assign case studies to teams of two students per team and have them present the case studies to the class, with no more than one or two case studies per class period. We start each class period with a case study presentation prior to my prepared lecture. Each case study included questions at the end. The entire class has already read each case study and answered the prepared questions prior to each case study presentation. The presentations typically last no more than 5 minutes per team. The teams are instructed to take their presentation beyond the prepared questions by filling in gaps in the info provided, embellishing the info provided, etc."
		"Make students work in Teams and present their findings to the class"
Class Discussion	2	"After each group has presented their analysis, ask all groups to comment or ask follow-up questions. After all groups are done, summarize the findings of the class as a whole"
		"Present case to students, ask them to review/discuss, present opinions/findings"

CHAPTER 5: DISCUSSION

Introduction

This study presented instructor perspectives on effectiveness and developed 20 authentic case studies messaging ethical decision making challenges. Findings confirmed case studies were effective and availability was scarce. The perspectives of CM instructors in accredited American Council for Construction Education (ACCE) programs helped to develop and refine 20 case studies that may increase consciousness of consequences, a term used by Dean and Beggs. The researcher is a construction manager with 30 years of exposure in commercial construction throughout the United States. This study was a culmination of experience, review of literature, and a survey of CM instructors of ACCE accredited institutions.

An overview of survey findings as related to literature, answers to research questions, conclusions, 20 case studies, weaknesses, implications, and recommendations for future research follow.

Overview of Findings

CM instructors totaled 78 from throughout the U.S. who responded via Qualtrics in Spring 2021. Most taught ethical decision making through lecture and discussion (82.89%). Most CM programs did not have a dedicated standalone course (80.26%). This value of 80% mirrored similar findings where 75% of students reported not having a standalone course in Dr. Jackson's 1998 study.

"Unique pressures" in construction were recognized by most respondents (67.65%). When asked if construction had an "everybody does it" attitude with regard to ethical transgressions, 47.06% responded no, 42.65% yes. Over 38% responded ethical transgressions

were systemic. These values were similar to a 2013 survey completed by the Ethics Resource Council (ERC) where 40% of employees of largest companies reported they felt pressure to compromise standards (p. 20); 67% of middle managers observed misconduct the prior year (p. 33), and 26% of those felt pressure to compromise standards (p. 33).

The Construction Industry Ethics and Compliance Initiative (CIEGI), a sponsor of a 2013 study recommended the following action items:

(1) combat pressure inherent to the industry.

(2) establish benchmarks for self-regulation and accountability.

(3) conduct further inquiry into on-site management of misconduct.

As of 2022, the researcher has not found a follow-up survey to the 2013 survey by the ERC with the same or similar goals.

Per literature, codes of ethics did not appear to have an impact on ethics. Industry leaders identified codes as having been something they could point to when unethical decisions were made. As reported, employees noted misrepresentation of value of work, or overbilling as having occurred more frequently with organizations with a code of ethics (Jackson, 2000, p. 110). Research on codes was scarce and more was needed (Sinha et al., 2007, p. 295).

Over 76% perceived ethical decision-making education was impactful on students' professional development. Literature supported this, ethics education as effective (Dean & Beggs, 2006; Swanson, 2004), and could be taught (Carlson & Burke, 1998; Kohlberg, 1981; Rest, 1986; Sims & Felton, 2005; Trevino, 1992; Weber & Glyptis, 2000). Over 95% considered instruction as their role, of which over 92% believed they were qualified.

Instructors identified a lack of authentic case studies (43.20%) and actual events as having been most important (56.58%). Nearly 83% identified relevant topics or actual events

most important. Instructors viewed case studies as effective (91.04%), used them (83.58%), to teach ethical decision making (73.13%). There was a lack of authentic case studies (El-Zein et al., 2007; Sims & Felton, 2005, p. 33; Sinha et al., 2005, p. 292; 2007; Stanwick, 2010), in literature and findings of this survey. An instructor wrote "I struggle finding construction industry case studies on-line".

Respondents were unclear if ethical decision-making instruction was adequate. Instructors were neutral (41.79%) that the content of courses on ethical decision making was adequate in their CM program. When asked if students were taught adequately outside of CM program, a similar percentage was neutral (44.78%). These values may indicate that instructors were unaware of the subject being included in other required coursework.

Qualitative responses proved informative toward effectiveness. Inductive coding identified categories such as simplifying and shortening of content. Instructors noted they reviewed and created case studies from experience, groups presented, and discussed. Actual events and targeted issues were important. Data contributed to improvement of content, length, topics, simplification, and emphasized principles of individual decisions impacting careers. Feedback provided on their perspectives of industry; unique pressures, “everybody does it”, and systemic transgressions, as well as methods of teaching were informative and incorporated. Class discussion, lecture, assignment, homework, course project and write-up were techniques identified as used by instructors.

Qualitative responses compared to themes found in literature. Identification of the slippery slope was present, "Ethical lapses start on a minor scale until they become routine, then the major ones along, and they pass by". Shafer-Landau determined the slippery slope of small decisions grew to larger ones (2015, p. 134). Another instructor with less than 5 years of

teaching wrote, "Is this the right way to recover cost over runs". Dr. Jackson found students came into industry “with higher ideals and ethical standards” than experienced managers (1998, p. 33). Another instructor with over 30 years of experience replied “I am not proud of some of my choices”. These were noteworthy as the findings echoed the literature even though Dr. Jackson’s study included students.

Quantitative and qualitative responses contributed to refinement and development of the case studies. Mean scores and variance of descriptive statistics highlighted areas of agreement. Case studies teaching ethical decision making were effective as identified by instructors and literature. Most (65%) of instructors responded favorably to the example case studies. This percentage was prior to incorporating recommended improvements.

Research Questions Answered

RQ 1: How do instructors perceive their role and/or responsibility of educating undergraduate students on ethical decision making in commercial construction?

From the survey “I consider it my role to teach students on topics involving ethical decision making in construction”; 68 responded. Instructors numbered 31 who strongly agreed (45.60%), 34 agreed (50.00%), two neutral, and a single instructor disagreed, none strongly disagreed.

RQ 2: How do instructors perceive ethical decision-making content of undergraduate CM program at their institution?

“The content of courses on ethical decision making in our CM program is adequate” had 67 responses. The highest was neutral with 28 responses (41.80%), 19 agreed (28.30%), while 14 disagreed (20.90%), four strongly agreed, and two strongly disagreed.

"At least one introductory ethical decision-making course should be mandatory for all students enrolled in our CM program". Of 67 responses, 22 agreed (32.80%), 15 strongly agreed (22.40%), 13 neutral (19.40%), 13 disagreed (19.40%), and four instructors strongly disagreed (5.90%).

"Ethical decision making is an important aspect of a CM program at an institution"; 24 of 67, or 35.82% strongly agreed, 34 agreed (50.75%), seven were neutral (10.45%), two disagreed (2.99%), with none strongly disagreeing. "Students are taught adequately about ethical decision making in classes outside of our CM program"; one strongly agreed (1.49%), seven agreed (10.45%), 30 were neutral (44.78%), 23 disagreed (34.33%), and six strongly disagreed (8.96%).

RQ 3: Do instructors use case studies to teach? Do they use them to teach ethical decision making? If so, how are they being used?

In response to "I use case studies as an instructional tool", 22 of 67 strongly agreed (32.84%), 34 agreed (50.75%), eight were neutral (11.94%), three disagreed (4.48%), and none strongly disagreed. "I use case studies to teach ethical decision making"; 20 of 67 strongly agreed (29.85%), 29 agreed (43.28%), eight were neutral (11.94%), seven disagreed (10.45%), and three strongly disagreed (4.48%). Interestingly "I use case studies to teach ethical decision making"; seven who disagreed were from eastern states while none disagreed from western states. Dr. Jackson's dissertation noted she "was unable to uncover any reasons why the Western Region of the United States in particular seems to be more sensitive to ethical issues" (2000, p. 120).

RQ 4: Are there differences among instructors using case studies based on years of teaching?

Analysis of variance indicated no significant difference among instructors using case studies based on years of teaching. Findings reported no significant difference using case studies based on years of experience as a project manager and/or superintendent.

RQ 5: What criteria do instructors identify for selection of effective, different, and topical case studies?

Actual events were identified as being most important by 48 instructors (56.58%). Relevance was highlighted as most important by 20 instructors (26.32%).

Conclusions

Leadership is a big part of ethical decision making; doing what you would in private, as in public. This study assisted learners to consider consequences of decisions; to themselves, their careers, the organization, and to society. Literature identified managers using lower level moral reasoning at work than they do in their personal lives (Trevino, 1992, p. 450). Why is this? Why should this be acceptable in any form?

Construction accounted for 6.62% of the gross domestic product (GDP) of the U.S.; $1.56 trillion in 2021 (BEA, 2021). Why was it mostly government reports from the Department of Justice (DOJ), and the Federal Bureau of Investigation (FBI) identified ethical transgressions and fraud of an industry so critical to growth? Official government publications accounted for nearly half; two to one over magazine, trade publications, newspaper articles, and web publications per the content listing dated August 1, 2016. The most recent survey by industry found self-policing was a favored method of correction (ERC, 2014). A former prosecutor with Manhattan's District Attorney had a different view; "The industry at large needs to own it, which it hasn't done…The industry doesn't self-police. The pleas, the penalties, the conviction itself ends up being a business expense" (Brenzel, 2018, p. 3). Findings included here may shed light

if industry had the will or the capability to police itself. How much has really changed since Dr. Jackson found professionals perceived questionable and improper bidding practices as the main ethical transgression in 2000 (p. 110)? Are the construction industry and stakeholders content with the status quo? Should they be? Should owners of projects be content, should society?

The Ethics Resource Council (ERC) and nearly two-thirds of respondents to this survey concluded construction had unique pressures so intense that led employees to compromise standards (2013, p. 14). Is it also true nurses, firefighters, and financial managers have unique pressures? Would society deem it appropriate for compromised standards of these professions? If firefighters, nurses, and financial managers considered "unique pressures" a reason to compromise standards, would people lose their lives, or their retirement savings?

If "everyone does it", is it not still wrong? Instructors to this survey at 42.65% agreed this concept existed in construction. What other industry would allow "systemic" ethical transgressions? Instructors responded at 38.24% who agreed this perspective existed. Over a third of employees in the ERC survey considered ethical transgressions were systemic. Is this acceptable? Does it make a difference if the project is a university with a great endowment, a children's hospital, or a national monument? Should it make a difference?

When ethical transgressions were identified, was it acceptable that 34% of construction employees lost their jobs as retaliation for having reported unethical acts (ERC, 2013, p. 44)? As employees grew in their career and were exposed to more of the business, they gained attachments and had more to lose. How did reporting wrongdoing to their manager, human resources, or the government, change from views held as an idealistic entry level construction engineer? Literature stated whistleblowers stood to face detriment to their career (McQueeney, 2006). Figure 8 is Forces on a Construction Managers' Decision Making.

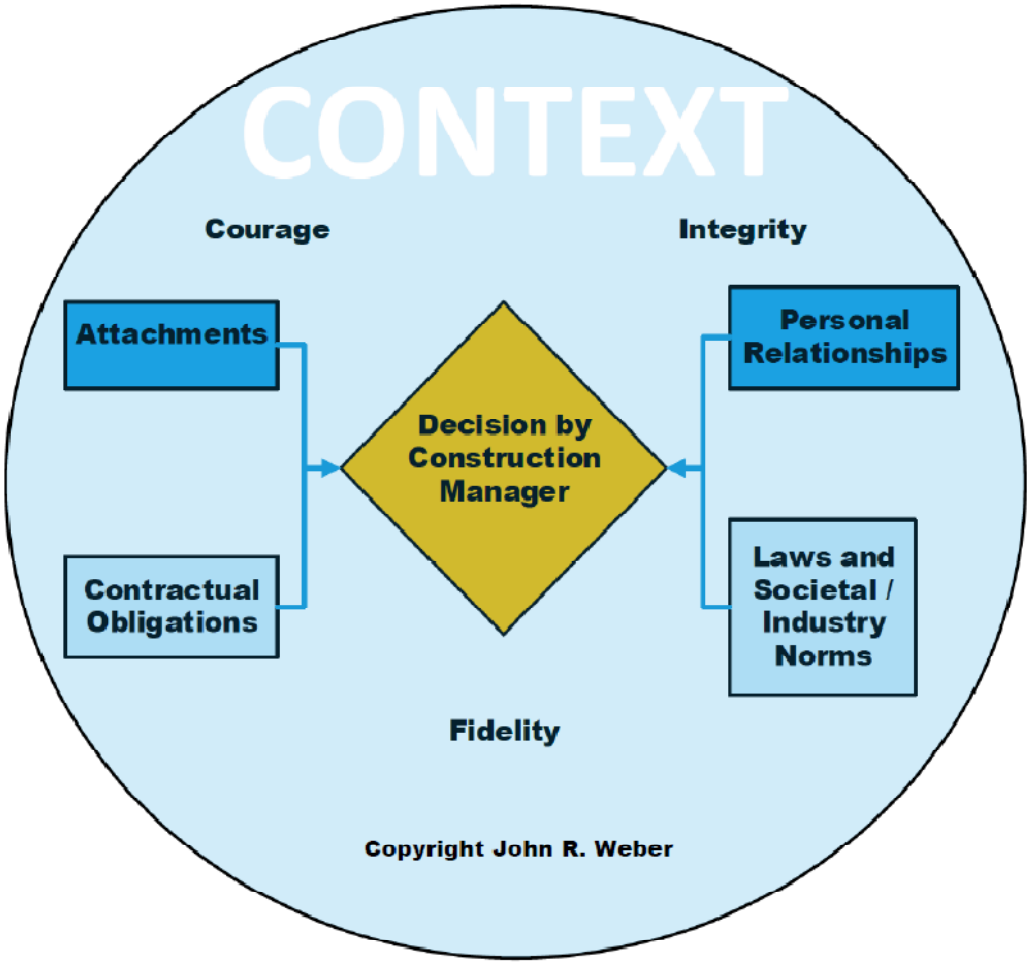

Figure 8

Forces on a Construction Managers' Decision Making

This model summarized prior findings combined with experiences of the author. Decisions by construction managers included courage, integrity, and fidelity. Moral courage to decide, integrity to be proud, and fidelity to those that depended on the decision are included. Attachments, personal relationships, contractual obligations, laws and societal/industry norms influenced the decision, differing depending on context.

Forces on a Construction Managers' Decision Making could be used when evaluating decisions in case studies. While role play, perhaps a 50 year old superintendent may be more apt to "look the other way" because they had a mortgage or a teenager in college. A recent graduate

may question why ethical transgressions were not reported all of the time as the law required. The organization code of ethics or contract may have included specific stipulations regarding personal gifts or conflicts of interest. Different stakeholders with different personal relationships may have viewed these rules as applying to others.

A construction manager should have the courage, integrity, and fidelity to make a decision they can defend privately and publicly. Context of the situation may alter the decision but it should still be defendable even when considering all of the following; attachments, personal relationships, the contract, and the law.

Authentic case studies prepare learners for decisions many will face. Literature identified personal issues students were likely to encounter (Maclagan & Snell, 1992; Sims & Sims, 1991). These contained themes of how decisions directly impacted careers (McQueeney, 2006, p. 159). These 20 case studies may assist in these challenges.

Kohlberg's 6 stages of development included law and order prior to social contract. Learners entered the workforce with stronger idealistic views than they retired with. Rather than decisions made to avoid punishment or for their own self interest, should construction managers have considered the greater good and larger impact on society? The author intends to publish the 20 authentic case studies along with content listing, and teaching aids.

Courses identified for decision-making case studies featured ethical dilemmas are project management, field management, estimating, scheduling, safety, and others. The 20 case studies included topics developed over years of research, each fitting different curriculum.

Teaching aids in the appendix are flow diagrams of project timelines and models, detailed quotes from literature, and reference lists. These could be used to improve awareness of decision making. The reference lists, quote lists from literature, and flow diagrams can be used in concert

to provide the instructor with the tools to initiate discussion, have student identify, research, analyze, and promote learning. Pattern matching of these listed sources provoke contemplation of systemic ethical transgressions.

Authentic case studies to teach ethical decision making were effective and difficult to find. Further research on use may provide benefits to industry and society. These 20 case studies from the viewpoint of owners' representative, general contractor, and subcontractor presented authentic scenarios. Experiences of the author contributed to knowledge with a perspective of decision maker with the desire to build a career, and to do right; two factors that should be congruent, not conflicting. Construction projects are a blank canvas at the beginning, an opportunity. The decisions made during progress create experiences. Some experiences are good, some not so, all contribute to learning. A career in construction also begins as a blank canvas then guided by experiences and decisions.

Acknowledged Weaknesses of the Study

The researcher acknowledged the study could have been improved upon. The response rate of 8.12% was lower than sought. In addition to quantitative data, 32 instructors provided valuable qualitative data. Representation from each CM program was a goal not reached. Distributed in Spring 2021 during a global pandemic with virtual learning the norm, impacts to response rate may have occurred.

The survey inquired of perspectives of instructors not including the view of students. Future studies may include owners, students, industry professionals, or the general public. The goal was to gain perspectives of instructors as they were in a position impacting future construction managers.

Implications and Recommendations for Future Research

Communication methods used and learned during the study were beneficial. One method of forwarding the initial notification by the researcher's university email address rather than Qualtrics. Emails sent to each individual listed potential respondent in the blind carbon copy (BCC) address block to each institution of the 72 ACCE members with a unique memorandum. This was done for thank you notices also. This personalized the message more so than a group email from Qualtrics would have. This took more time and allowed a response to be returned. Some responses from caring instructors provided inspiration to the researcher as follows:

"I am happy to help you."

"I would be happy to help."

"I will be happy to participate in the survey."

"…so ethics is near and dear to what I do and teach….I'd love to hear more about your findings in this endeavor. I'd also like to offer whatever help from the industry side I can, if there is any benefit to you in that."

"Thanks for the reminders. Hope it is helpful in your research."

"Will do. We ask the same thing once in a while so least I can do is do the same favor. I'll look for it."

"Yes, I will participate."

"Ok, count me in. Thank you."

Future research in this area is needed; minimal amount of literature exists. The first and only dissertation found on the subject in 2000 emphasized an untapped topic. The most recent survey completed by industry in the year 2013 and considered a "benchmark" (ERC, p. vi), should be followed with others. Most of the literature of ethical transgressions and fraud were

found in government publications. Why is this? A 2020 industry article stated "Indeed, executives were caught. But by the government, not by the companies. And given the weaknesses inherent in construction contracting, it appears certain such crimes will happen again" (Brenzel, 2020, p. 7). Future research could include industry professionals to help ascertain if they were aware of impacts of their decisions.

Nonrational factors in decision making was one of the most important themes. Identified by Maxwell as immediate and intuitive, nonrational factors are an area of study the author recommended be followed up (2016). Factors such as personal relationships as basis for decision making are lacking research. Do students understand ethical sensitivity and how this impacted their decision making, which impacted their career? Over forty percent of instructors responded neutral to the question if students were taught adequately about ethical decision making. This is another area of potential exploration.

Future research could include the concept of the industry policing itself, "unique pressures" attributed by some, systemic ethical transgressions, and the factors that lead to ethical disengagement as construction managers gain experience. Are construction managers making decisions based on ego, consequences, path of least resistance, or based on improving society? These 20 authentic case studies may contribute to individuals understanding their own decision-making process. Effectiveness and future use of these 20 case studies could be an area of research.

REFERENCE LIST

Abdul-Rahman, H., Wang, C., & Yap, X. W. (2010, December 4). How professional ethics impact construction quality: Perception and evidence in a fast developing economy. *Scientific Research and Essays, 5*(23), 3742-3749.

Accreditation Board for Engineering and Technology, Inc. (ABET). (2016). Criteria for Accrediting Engineering Programs, 2016-2017. *Criteria for accrediting engineering programs effective for reviews during the 2017-2018 accreditation cycle,* Baltimore, MD. Retrieved from http://www.abet.org/accreditation/accreditation-criteria/criteria-for-accrediting-engineering-programs-2016-2017/

Alpay, E. (2013). Student-inspired activities for the teaching and learning of engineering ethics. *Science Engineering Ethics, 19*(4), 1455-1468. doi:10.1007/s1 1948-011-9297-8

American Council for Construction Education. (ACCE). (2016, August 11). Images/Uploads. (2016, August 11). *Document 103 – Standards and criteria for accreditation*. Retrieved from http://www.acce-hq.org/images/uploads/Doc_103_Updated_081116_final2.pdf

American Institute of Architects (AIA). (2018). Retrieved from Best Practices, https://www.aia.org/bestpractices/178126-the-aia-code-of-ethics-and-ethical-practice

American Society of Civil Engineers. (ASCE). (2017). Code of Ethics/*Code of Ethics*. Retrieved from https://www.asce.org/code-of-ethics/

American Society of Civil Engineers. (ASCE). (2018). Engineer's Charter. *Policy Statement*. Retrieved from https://www.asce.org/engineer-s-charter/

Anderson, S. K., & Davies, T. G., (2000). An ethical decision-making model: A necessary tool for community college presidents and boards of trustees. *Community College Journal of Research and Practice, 24*(9)*,* 711-727.

Anderson, S. K., & Handelsman, M. M. (2011). *Ethics for psychotherapists and counselors: A proactive approach*. Wiley/Blackwell.

Anderson, S. K., Lujan, L., & Hegeman, D. L. (2009). Prepared for challenges: The importance of a professional and institutional ethical identity. *New Directions for Community Colleges, (148)*, 17-26.

Association of General Contractors (AGC). (2018a). Connect. Retrieved from https://www.agc.org/connect/agc-groups

Association of General Contractors (AGC). (2018b). Industry-priorities. Retrieved from https://www.agc.org/industry-priorities

Association of General Contractors Washington DC (AGCWA). (2018). About-us. Retrieved from https://www.agcwa.com/about-us

Assundani, R. H., Chinta, R., Manolis, C., & Burns, D. J. (2011). The effect of pedagogy on students' perceptions of the importance of ethics and social responsibility in business firms. *Ethics & Behavior*, *21*(2), 103-117.

Baron, J. (2000). *Thinking and deciding* (3rd ed.). Cambridge**.**

Beauchamp, T. L., & Childress, J. F. (2012). *Principles of biomedical ethics* (7th ed.). Oxford University Press.

Belludi, N. (2009, April 30). Warren Buffet's rule of thumb on personal integrity. *Right Attitudes, Ideas for Impact*. Retrieved from http://www.rightattitudes.com/2009/04/30/warren-buffett-on-personal-integrity/

Blanchard, K., & Peale, N. V. (1988). *The power of ethical management*. William Morrow & Company.

Bloom, B. S., Engelhart, M. D., Furst, E. J., Hill, W. H. & Krathwohl, D. R. (1956). *Taxonomy of educational objectives. Handbook I: Cognitive domain. Handbook II: Affective domain*. David McKay.

Brenzel, K. (2018). The anatomy of construction corruption. *The Real Deal New York Real Estate News.Retrieved from https://therealdeal/magazine/april-2018/*

Brenzel, K. (2020). Ex-Turner construction exec cops to bribery charge. *The Real Deal New York Real Estate News. Retrieved from https://therealdeal/magazine/oct-2020/*

Brenzel, K. (2020). Cracks in the foundation: Construction's kickback problem. *The Real Deal New York Real Estate News. Retrieved from https://therealdeal/magazine/dec-2020/*

Brinkman, J., & Sims, R. R. (2001). Stakeholder-sensitive business ethics teaching. *Teaching Business Ethics 5*(2): 171-193.

Bureau of Economic Analysis. (2016, April 21). U.S. Department of Commerce. Retrieved from http://www.bea.gov/newsreleases/industry/gdpindustry/gdpindnewsrelease.htm

Byrne, E. P. (2012). Enhancing engineering employability in the 21st century; handling uncertainty and complexity through new entrepreneurship. *Proceedings of the 4th International Symposium for Engineering Education ISEE2012*, Shefield, UK.

Byrne, E. P., & Mullally, G. (2014). Educating engineers to embrace complexity and context. *Institution of Civil Engineers, 167*(6), 241-248. Retrieved from http://dx.doi.org/10.1680/esu.14.00005

Cagle, J. A., & Glasgo, P. W. (2008). Using ethics vignettes in introductory finance classes: Impact on ethical perceptions of undergraduate business students**.** *Journal of Education for Business*, *84*(2), 76-83.

Carlsen, R. (2008, December 12). Construction industry faces ethical challenges, exec says. *Engineering News Record (ENR).* Retrieved from www.enr.com

Carlson, P. J., & Burke, F. (1998). Lessons learned from ethics in the classroom exploring student growth in flexibility, complexity and comprehension. *Journal of Business Ethics, 16*(12/13), 1347-1351.

Clarkeburn, H. (2002). The aims and practice of ethics education in an undergraduate curriculum: Reasons for choosing a skills approach. *Journal of Further and Higher Education*, *26*(4), 308-315. doi: 10.1080/0309877022000021711

Construction Industry Ethics & Compliance Initiative (CIECI). (2014). About. Retrieved from http://www.ciecinitiative.org/About/Charter

Construction Management Association of America (CMAA). (2018). Homepage. Retrieved from about CMMA page. Retrieved from https://cmaanet.org/about-us

Colby, A., & Sullivan, W. M. (2008). Ethics teaching in undergraduate engineering education. *Journal of Engineering Education*, *July*, 327-338.

Creswell, J. W. (2003). *Research design. Qualitative, quantitative, and mixed methods approaches* (2nd ed.). Sage.

Creswell, J. W., & Plano-Clark, V. L. (2011). *Designing and conducting mixed methods research.* Sage.

Day, L. A. (2006). *Ethics in media communications; cases and controversies* (5th ed.). Wadsworth/Thomson.

Dean, K. L., & Beggs, J. M. (2006). University professors and teaching ethics: Conceptualizations and expectations. *Journal of Management Education*, *30*(1), 15-35.

Department of Commerce. (2018). Construction Spending. Retrieved from https://www.census.gov/construction/cpi/

Department of Justice (DOJ). (2015, November 24). Homepage. *Granite construction to pay more than $8 million in forfeiture and penalties for engaging in a scheme to fraudulently claim credit for work performed by a minority owned business.* Eastern District of New York. U. S. Attorney's Office. Retrieved from https://www.justice.gov/

Department of Justice (DOJ). (2019, February 20). Homepage. *Justice bay area contractors convicted in scheme to rig bids for department of energy building contract.* U. S. Attorney's Office. Retrieved from https://www.justice.gov/

Department of Justice (DOJ). (2019, November 5). Homepage. *Justice department announces procurement collusion strike force: A coordinated national response to combat antitrust crimes and related schemes in government procurement, grant and program funding.* Office of Public Affairs. Retrieved from https://www.justice.gov/

Department of Justice (DOJ). (2020, July 29). Homepage. *Former construction executive pleads guilty to tax evasion in connection with bribery scheme. Other executives charged and sentenced for participation in same construction kickback scheme.* U. S. Attorney's Office. Retrieved from https://www.justice.gov/

Department of Justice (DOJ). (2022, November 15). Homepage. Justice department's procurement collusion strike force announces four new national law enforcement partners as it enters its fourth year. U. S. Attorney's Office. Retrieved from http://www.justice.gov/

Dewey, J. (1963) (Originally published 1938). *Experience and education*. Collier.

Doran, D. (2004). *Survey of Ethical Practices in the Construction Industry.* Fails Management Institute (FMI) & Construction Management Association of America (CMAA), 1-18.

El-Zein, A., Bowden, P., & Clarkeburn, H., (2007). Sustainability and ethics as decision-making paradigms in engineering curricula. *International Journal of Sustainability in Higher Education, 9*(2), 170-182.

Eligon, J. (2010, April 8). Assistant District Attorney Diana Florence, Manhattan. *For executives in concrete testing case, a sentencing and a suicide attempt.* Retrieved from www.nytimes.com

Emerson, R. M., Fretz, R. I., & Shaw, L. L. (2011). *Writing ethnographic fieldnotes* (2nd ed.). University of Chicago Press.

Ethics Resource Center (ERC) ISBN 978-0-916152-22-2. (2013). *National business ethics survey of the U.S. construction industry. Gauging industry practices & identifying ethics challenges.* Retrieved from www.ethics.org

Ethics Resource Center (ERC). (About). (2018). *Ethics and compliance initiative.* Retrieved from http://www.ethics.org/about/mission-statement

Evans, J. M., Trevino, L. K., & Weaver, G. R. (2006). Who's in the ethics driver's seat? Factors influencing ethics in the MBA curriculum. *Academy of Management Learning and Education, 5*(3)*,* 278-293.

Fails Management Institute (FMI). (2010). Homepage. *Ethics Programs: Federal Imperative, Cultural Opportunity.* Retrieved from https://www.fminet.com

Falkenberg, L., & Woiceshyn, J., (2008, May). Enhancing business ethics: Using cases to teach moral reasoning. *Journal of Business Ethics, 79*(3), 213-217.

Fan, L., & Fox, P. (2009, April). Exploring factors for ethical decision making: Views from construction professionals. *Journal of Professional Issues in Engineering Education and Practice*, *135:2*(60), 60-69.

Federal Bureau of Investigation (FBI). (2011, September 1). Homepage. *Construction company sentenced to pay $5 million for clean water act violation. Employees illegally discharged pollutants into the San Joaquin River over the course of several years.* San Francisco Division. Retrieved from https://www.justice.gov/

Federal Bureau of Investigation (FBI). (2012, April 24). *Construction giant Lend Lease (Bovis) charged with defrauding clients in three separate schemes and will pay over $50 million and institute comprehensive reforms. Former principal in charge of Bovis' New York office pleads guilty to fraud charge, Faces up to 20 years in prison.* New York Field Office. Retrieved from https://www.justice.gov/

Federal Bureau of Investigation (FBI). (2012, April 24). Homepage. *Former principal in charge of Bovis' New York office pleads guilty to fraud charge, faces up to 20 years in prison.* New York Field Office. Retrieved from https://www.justice.gov/

Federal Bureau of Investigation (FBI). (2014, December 4). Homepage. *Former Bechtel executive pleads guilty in connection with $5.2 million kickback scheme.* Baltimore Division. Retrieved from https://www.justice.gov/

Federal Bureau of Investigation (FBI). (2015, March 23). Homepage. *Former Bechtel executive sentenced to 42 months in prison and ordered to forfeit $5.2 million in connection with kickback scheme.* Baltimore Division. Retrieved from https://www.justice.gov/

Finelli, C. J., Holsapple, M. A., Ra, E., Bielby, R. M., Burt, B. A., Carpenter, D. D., Harding, T. S., & Sutkus, J. A. (2012). An assessment of engineering students' curricular and co-curricular experiences and their ethical development. *Journal of Engineering Education*, *101*(3), 469-494.

Gandhi, Mahatma. (1962). *The essential Gandhi. An anthology of his writings on his life, work, and ideas (L. Fischer, Trans.).* Random House.

Gilley, J. W., Anderson, S. K., & Gilley, A. (2008). Human resources management as a champion for corporate ethics. Moving towards ethical integration and acculturation in the HR function and profession. *Executive Ethics: Ethical Dilemmas and Challenges for the C-Suite,* 191-213.

Hashemian, G., & Loui, M. C. (2010). Can instruction in engineering ethics change students' feelings about professional responsibility? *Science Engineering Ethics, 16*(1), 201-215. doi: 10.1007/s11948-010-9195-5

Hattab, A. S. (2004). Current trends in teaching ethics of healthcare practices. *Developing World Bioethics*, *4*(2), 160-172.

Hennelly, B. (2012). *City's Construction Giants Face Criminal Probe for Billing Fraud.* WNYC. Retrieved from: https://www.wnyc.org/story/226020-citys-construction-giants-face-criminal-probe-billing-fraud

Hoke, T. (2014, February). (About/Ethics). A question of ethics. Improper use of confidential information. *Civil Engineering Magazine (ASCE), 84*(2), 46-47. Retrieved from https://www.asce.org/question-of-ethics-articles/feb-2014/

Hoke, T. (2013). A question of ethics. Keeping the playing field level. *Civil Engineering Magazine (ASCE).* Retrieved from https://www.asce.org/question-of-ethics-articles/

Holland, M. M. (2005). Stronger ethics codes. *Engineering News Record (ENR), 255*(23), p. 5.

Honeyman, C. (2007, September 6). Commentary: For builders, integrity is a code. *Daily Journal of Commerce* (Portland, OR). Retrieved from https://djcoregon.com/

Huscle, B. J. (2012). Learner outcome attainment in teaching applied ethics versus case methodology. *Teaching Philosophy*, *35*(3), 243-262.

Jackson, B. J. (1998). *Perceptions of college construction students regarding the ethics of the construction industry*. Unpublished master's thesis, Colorado State University.

Jackson, B. J. (2000). *The perceptions of experienced construction practitioners regarding ethical transgressions in the construction industry* (Doctoral dissertation). Colorado State University.

Johnson, C. E. (2015). *Meeting the ethical challenges of leadership. Casting light or shadow*. Sage.

Jones, D. (2012, September 1). Combatting construction fraud. *The Real Deal.* Retrieved from https://therealdeal.com/magazine/new-york-september-2012/combating-construction-fraud/

Kang, B. G., Edum-Fotwe, F., Price, A., & Thorpe, T. (2012). The application of causality to construction business ethics. *Social Responsibility Journal (10)3*, 550-568.

Kant, I. (1979). *Lectures on ethics*. (L. Infield, Trans.). (Original work published prior to 1804).

Kenney, A. (2019, January 24). Colorado Convention Center scandal: Mortenson says other companies got inside info, too. *The Denver Post*. Retrieved from http//www.denverpost.com

Kidder, R. M. (1995). *How good people make tough choices: Resolving the dilemmas of ethical living.* Harper.

King, W. S., Duan, L., Chen, W. F., & Pan, C. L. (2008, January). Education improvement in construction ethics. *Journal of Professional Issues in Engineering Education and Practice*, *134*(1), 12-19.

Kitchener, K. S. (1984). Intuition, critical evaluation and ethical principles: The foundation for ethical decisions in counseling psychology. *Counseling Psychologist, 12*(3-4), 43-55.

Kitchener, K. S., & Anderson, S. K. (2011). *Foundations of ethical practice, research, and teaching in psychology and counseling* (2nd ed.). Routledge/Taylor & Francis Group.

Kohlberg, L. (1981). *The philosophy of moral development – Essays on moral development, 1*. Harper and Row.

Kuhn, T. (2012). *The structure of scientific revolutions (4th ed.)*. University of Chicago Press.

Lama, Dalai. (1999). *Ethics for the new millennium.* Riverhead Books.

Lee, Bruce. (Date Unknown). Retrieved from https://www.pinterest.co/uk/pin/466967055106511684/

Lloyd, B., & Kidder, R. M. (1997). Ethics for the new millennium. *Leadership and Organizational Development Journal, 18*(3), 145-148.

Loui, M. C. (2005). Ethics and the development of professional identities of engineering students. *Journal of Engineering Education*, *October*, 383-390.

Maclagan, P., & Snell, R. (1992). Some implications for management development research into managers' moral dilemma. *British Journal of Management, 3*(September), 157-168.

Marshall, B., & Dewe, P. (1997). An investigation of the components of moral intensity. *Journal of Business Ethics, 7*(5), 521-529.

Maxwell, B., Tremblay-Laprise, A., Filion, M., Boon, H., Daly, C., van den Hoven, M., Heilbronn, R., Lenselink, M., & Walters, S. (2016). A five-country survey on ethics education in preservice teaching programs. *Journal of Teacher Education, 67*(2), 135-151.

May, D. R., & Luth, M. T. (2013). The effectiveness of ethics education: A quasi-experimental field study. *Science Engineering Ethics*, *19*, 545-568.

McCoy, B. H. (1983). The parable of the Sadhu. *Harvard Business Review*, *September-October,* 103-108.

McQueeney, E. (2006). Making ethics come alive. *Business Communication Quarterly, 69*(2), 158-171.

Mirsky, R., & Schaufelberger, J. (2015). *Professional ethics for the construction industry*. Routledge.

Mitcham, C., & Duvall, R. (2000). *Engineering ethics engineer's toolkit*. Prentice–Hall.

Monteverde, S. (2014). Undergraduate healthcare ethics education, moral resilience, and the role of ethical theories. *Nursing Ethics*, *21*(4), 385-401.

Murphy, D. E. (2002). Sites. The federal sentencing guidelines for organizations; a decade of promoting compliance and ethics. *Iowa Law Review*. Retrieved from https://www.ussc.gov/sites/default/files/pdf/training/organizational-guidelines/selected-articles/Murphy1.pdf

Murphy, P. E. (2004). Observations on teaching marketing ethics. *Marketing Education Review*, *14*(3), 15-21.

Murray, J. (2020, April 13). Convention center bid-rigging scandal: Mortenson agrees to $1.3M settlement that includes work on coronavirus project. Agreement with Colorado attorney general includes $650,000 fine, donation of construction services. *The Denver Post*. Retrieved from http://www.denverpost.com

Nair, K. (1994). *A higher standard of leadership, lessons from the life of Gandhi*. Barrett-Koehler.

Nash, L. (1989). *Ethics without the sermon. Ethics in practice; Managing the moral corporation.* (pp. 243-257). Harvard Business School Press.

New York County District Attorney. (2016, March 1). Manhattan district attorney, Cyrus Vance, Jr. *NY excavation company CEO faces felony insurance fraud charges.* Retrieved from www.manhattanda.com. p. 1.

Nguyen, N. T., Basuray, M. T., Smith, W. P., Kopka, D., & McCulloh, D. N. (2008). Ethics perception: Does teaching ethics make a difference? *Journal of Education for Business*, November/December, *84*(2), 66-75.

Northouse, P. G. (2010). *Leadership. Theory and practice* (5th ed.). Sage.

Office of Inspector General. (2015). U. S. Department of the Interior. *Fraud Awareness.* Handed to author on federal project by IG agent. Hardcopy of information retrieved from www.doi.gov/oig/hotline

Office of the Press Secretary, The White House. (2009, November 17). *Executive order 13519 – Establishment of the financial fraud enforcement task force*.

Park, M., Kjervik, D., Crandell, J., & Oermann, M. H. (2012). The relationship of ethics education to moral sensitivity and moral reasoning skills of nursing students. *Nursing Ethics*, *19*(4), 568-580.

Parson, E. (2005, August). Content. *The Construction Industry's Ethical Dilemma*. Civil Engineering. ASCE. Retrieved from https://www.ecmweb.com/content/construction-industrys-ethical-dilemma

Prior Jonson, E., McGuire, L., & Cooper, B. (2016). Does teaching ethics do any good? *Ethics and Training*, *58*(4), 439-454.

Powers, M. (2019, November). Feds' bid rig crackdown targets construction, among others. *Engineering News Record*. Retrieved from www.enr.com

Rest, J. R. (1984). Research on moral development: Implications for training counseling psychologists. *The Counseling Psychologist, (12)*3, 19-29.

Rest, J. R. (1986). *Moral development: Advances in research and theory*. Praeger.

Rest, J. R. (1988). Why does college promote development of moral judgment? *Journal of Moral Education, 17*(3), 183-194.

Rest, J.R. (1988a). Can ethics be taught in professional schools? *The Psychological Research, Easier Said than Done, Winter*.

Rittel, H., & Webber, M. (1973). Dilemmas in a general theory of planning. *Policy Sciences, 4*, 155-169.

Rogerson, M. D., Gottlieb, M. C., Handelsman, M. M., Knapp, S., & Younggren, J. Y. (2011). Nonrational processes in ethical decision making. *American Psychologist, 66*(7), 614-623. doi: 10.1037/a0025215

Rollin, B. (2006). *Ethics and science.* Cambridge.

Rossouw, G. J. (2002). Three approaches to teaching business ethics, *Teaching Business Ethics, 6*(4), 411-433.

Rubin, D. (2011, November 21). New delays in two high-profile construction criminal cases. *Engineering News Record*. Retrieved from www.enr.com

Schatzman, L., & Strauss, A. L. (1973). *Field research: Strategies for a natural sociology*. Prentice-Hall.

Schaupp, D., & Lane, M. S. (1992). Teaching business ethics: Bringing reality to the classroom. *Journal of Business Ethics, 11*, 225-229.

Schmidt, C. D., McAdams, C. R., & Foster, V. (2009). Promoting the moral reasoning of undergraduate business students through a deliberate psychological education-based classroom intervention. *Journal of Moral Education*, *38*(3), 315-334.

Secret, M. (2012, November 21). No prison time for former New York City construction executive in overbilling scheme. *New York Times.* Retrieved from www.nytimes.com

Shafer-Landau, R. (2010). *The fundamentals of ethics.* Oxford.

Shaw, V. (2010, April 13). Global construction industry faces growing threat of economic crime. *Price Waterhouse Coopers*. Retrieved from www.pwc.com/construction

Siller, T. J., Rosales, A., Haines, J., & Benally, A. (2009). Development of undergraduate students' professional skills. *Journal of Professional Issues in Engineering Education and Practice, 135*(3)*,* 102-108**.**

Sims, R. R., & Felton Jr., E. L. (2005). Successfully teaching ethics for effective learning. *College Teaching Methods & Styles Journal*, *1*(3), 31-48.

Sims, R. R. & Sims, S. J. (1991). Increasing applied business ethics courses in business school curricula. *Journal of Business Ethics, 10,* 211-219.

Sinha, S. K., Thomas, H. R., & Kulka, J. R. (2004). Integrating ethics into engineering design of construction process. *Proceedings of the 2004 American Society for Engineering Education Annual Conference & Exposition.* doi: 10.18260/1-2--13254

Sinha, S. K., Thomas, H. R., & Kulka, J. R. (2007). Integrating ethics into the engineered construction curriculum. *Journal of Professional Issues in Engineering and Practice*, ASCE, 291-299.

Smith, D. H. (1993). Stories, values, and patient care decisions. In C. Conrad (Ed.), *The ethical nexus* (pp. 123-148). Ablex.

Smith, S. (2015, January 7). CityLimits.org articles examine role of private construction monitors in NYC. Retrieved from www.ehstoday.com

Soltes, E. (2016). *Why they do it, inside the mind of the white-collar criminal***.** Public Affairs.

Staff. (2013, March 15). Whistleblower and United States attorney achieves settlement of construction fraud action. *Marketwire.*

Staff. (2011, November 3). Homepage. *Examination of contractors' business practices could save lives.* Retrieved from www.prnewswire.com

Staff. (2006, May 5). Homepage. Six face charges in big dig probe. *The Providence Journal* (Rhode Island). Retrieved from www.providencejournal.com

Staff. (2005, November 7). On the fraud front: One fed speaks up. *Engineering News Record,* Cover Story; Ethics; *255*(18), p. 30.

Staff. (2004, May 31). The Industry needs to take aim on unethical behavior. *Engineering News Record*. Retrieved from www.enr.com

Stake, R. E. (1995). *The art of case study research*. Sage.

Stanwick, P. A. (2010). Using multi-media content to present business ethics: An empirical study. *Journal of STEM Education*, *special edition*, 38-46.

Stark, A. (2005). Why are (some) conflicts of interest in medicine so uniquely vexing? In D. A. Moore, D. M. Cain, G. Loewenstein, & M. H. Bazerman (Eds.), *Conflicts of interest: Challenges and solutions in business, law, medicine, and public policy* (pp. 152-180). Cambridge.

Starrett, S. K., Lara, A. L., & Bertha, C. B. (2017). *Engineering ethics real world case studies.* ASCE.

Sutner, S. (2006, May 5). Homepage. Six big dig concrete suppliers arrested; Company was a sub at Worcester school. *Engineering News Record*. Retrieved from www.enr.com

Swanson, D. L. (2004). The buck stops here: Why universities must reclaim business ethics education, *Journal of Academic Ethics, 2*(1), 43-61.

Trevino, L. K. (1992). Moral reasoning and business ethics: Implications for research, education and management. *Journal of Business Ethics, 11*(5/6), 445–459.

Trevino, L. K. & McCabe, D. (1994). Meta-learning about business ethics: Building honorable business school communities. *Journal of Business Ethics*, *13*(6), 211-219.

Tuchman, J. L. (2012, January 23). *William G. Dorey: Raising the bar on ethics and compliance*. Retrieved from www.enr.com

Velsey, K. (2013, December 18). Manhattan D.A. levels charges in major electrical contracting kickback scheme. *New York Observer.* Retrieved from http://observer.com/2013/12/d-a-levels-charges-against-17-individuals-and-15-companies-in-major-electrical-contracting-kickback-scheme/

Walling, O. (2015). Beyond ethical frameworks: Using moral experimentation in the engineering ethics classroom. *Science Engineering Ethics*, *21*(6), 1637-1656. doi: 10.1007/s11948-014-9614-0

Weber, J., & Glyptis, S. M. (2000). Measuring the impact of a business ethics course and community service experience on students' values and opinions, *Teaching Business Ethics 4*, 341-358.

Yin, R. K. (1994). *Case study research: Design and methods* (2nd ed.). Sage.

Zucker, D. M. (2009). How to do case study research. *Teaching Research Methods in the Social Sciences,* Paper 2. Retrieved from https://scholarworks.umass.edu/nursing_facultypubs/2

APPENDICES

APPENDIX A: LITERATURE REVIEW METHODS

The content analysis included in Appendix B – *Fraud in the Commercial Construction Industry – Government and Other Publications (January 1, 2005 - April 30, 2016)* included 110 articles that detailed ethics and/or fraud in construction. This study was informed by a search of peer-reviewed journals and dissertations occurred by academic search tools provided by Colorado State University Library. *Academic Search premier*, *Google Scholar*, *Proquest*, and other similar avenues were used. Key words such as ethics, construction, case study, case study method, undergraduate, engineering, instruction, and fraud were utilized. A method of searched general topics on ethics and then funneled down to individual subjects to ethics in construction was the process.

Academic Search Premier contained articles from peer-reviewed journals, magazines, and newspapers. The *Web of Science* contained scholarly (peer-reviewed) articles. *Business Source Complete* contained reports and articles from business journals, magazines, newspapers. *Lexus-Nexus* and *Newsbank* had newspaper articles and *Google Scholar* included articles, patents, books, and more. *Engineering Village*, *Compendex*, and general *Google* searches produced results. Examples of search methods included "ethics" in *Academic Search Premier* yielding 189,260 results, while "ethics" and "construction" resulted in 3 articles. A similar search for "ethics" and "pharmaceutical" resulted in 13 articles.

Periodicals such as newspapers and magazine articles were found via search of academic library search tools and *Google* search. Websites pertaining to topics were located through *Google* search. Articles from peer-reviewed journals, dissertations, newspapers, magazines, and website publications were included. In addition, websites of professional organizations and

industry societies were reviewed for content based on ethics and case study instruction. Review of reference lists of discovered journal articles produced even more articles found and potentially included in this review. This was especially true for the topic of case studies utilized in instruction. There were certain sources that were cited much more than others. An example of this was *Principles of Biomedical Ethics* (7th ed.) by Beauchamp and Childress.

Case study instruction in ethics articles were reviewed for applicability. Over 100 articles were read. Electronic review of articles led to printing hardcopies if the article fit the goal of the study. Hardcopies were read, analyzed, highlighted, and margin notes written to identify categories. Ethics articles were classified into sections; other industries, in construction, and general ethics. Other industries consisted of medical, zoological, business, nursing, communications, engineering, and others. Articles were classified into three additional sections; effectiveness of ethics instruction and case studies based on ethics, and availability of authentic case studies. A single article on case study instruction on ethics for construction management programs was found. For ethics and morals, books were searched via Colorado State University library systems. Books were borrowed from public libraries or purchased.

Industry professional societies' websites such as the Associated General Contractors (AGC), www.agc.org, Associated General Contractors of Washington DC (AGCWA), www.agcwa.org, Construction Management Association of America (CMAA), www.cmaa.com, Construction Industry Ethics & Compliance Initiative (CIECI), www.ciecinitiative.org, American Institute of Architects (AIA), www.aia.org, American Society of Civil Engineers (ASCE), www.asce.org, Ethics Resource Center (ERC), www.ethics.org, Institute of Electrical and Electronics Engineers (IEEE), www.ieee.org, were reviewed for content on ethics in construction.

U.S. Government agencies' websites such as Bureau of Economic Analysis (BEA), www.bea.gov, Department of Commerce, www.census.gov, Department of Justice (DOJ), www.justice.gov, Federal Bureau of Investigation (FBI), and www.justice.gov were reviewed for content on ethics and fraud in construction.

Educational accreditation organizations' websites such as the Accreditation Board for Engineering and Technology, Inc. (ABET), www.abet.org, American Council for Construction Education (ACCE), www.acce-hq.org, and the Association to Advance Collegiate Schools of Business (AACSB), www.aacsb.edu were reviewed for content.

Approximately 20 books on ethics were utilized with about one-half purchased. The author read hundreds of articles. For scores of these, the text was summarized in 2 -3 typed pages and included in the filing system that informed the study. For construction related sources, "construction industry" and "fraud" yielded the highest number on the topic. Websites such as www.justice.gov provided the most press releases included in Appendix B – *Fraud in the Commercial Construction Industry – Government and Other Publications (January 1, 2005-April 30, 2016)*. Each of the 110 articles utilized for the content analysis were sorted in dated folders.

In further context of the number of articles written on the topic of ethics in construction, further searches on *Business Source Complete* of the term "Ethics" indicated 85,763 results. "Ethics" and "construction" on the same database indicated 1 result. The *EBSCO* host database resulted in 1,514 for the search terms "ethics" and "construction". This number was reduced to 212 articles when limited to the United States. The *Engineering Village* search terms "construction industry" and "ethics" resulted in 286 articles. When limited to the United States, the number of articles was 54. At the onset, the researcher did not realize government press

releases from the FBI and the DOJ would have made up most of data for the content analysis. It was noteworthy the majority of the articles detailing fraud in the construction industry were found on government press releases.

In total, eight academic peer-reviewed journal articles, one textbook, and one dissertation were found on the topic of ethics the U.S. construction industry. The topic of case studies in construction yielded three articles.

APPENDIX B: CONTENT LISTING PACKET

APPENDIX B1: CONTENT LISTING DATED AUGUST 1, 2016/FRAUD IN THE COMMERCIAL CONSTRUCTION INDUSTRY JANUARY 1, 2015 – APRIL 30, 2016

2005

Bishop, R. (2005). The industry needs a code of conduct. *Engineering News Record (ENR), 254*(4), p. 51.

Editorial. (2005). The industry needs to take aim on unethical behavior. *Engineering News Record (ENR), 254*(4), p. 52.

Holland, M. M. (2005). Stronger ethics codes. *Engineering News Record (ENR), 255*(23), p. 5.

Molesworth, C. (2005, January). Editor's report. *Pacific Builder and Engineer*, p. 4.

Parson, E. (2005, August). The construction industry's ethical dilemma. *Civil Engineering*. Retrieved from: https://www.ecmweb.com/content/article/20893044/the-construction-industrys-ethical-dilemma

Pinkham, P. (2005, May 26). Agent: Bullet slowed probe; Shooting stalled grand jury investigation of widespread fraud in construction industry, court told. *Florida Times Union (Jacksonville),* p. A-1.

Rubin, D. K., Hampton, T., Powers, M. B., Normile, D., Illia, T., & Barnes, J. (2005). Pressures and temptations have industry walking a fine line. *Engineering News Record (ENR), 255*(18), pp. 26–31.

Rubin, D. K., & Powers, M. B. (2005). State's ethics battle with feds hits bump; Judge supports U. S. view that New Jersey violates federal contracting rules, as other states watch. *Engineering News Record (ENR), 254(*4), p. 10.

Staff. (2005). On the fraud front: One fed speaks up. *Engineering News Record. Vol. 255*(18), p. 30.

2006

Jordan, J. (2006, November 1). Have you been the victim of fraud?; Although fraud occurs at all business types, the construction industry should be particularly vigilant. The most

important step a contracting firm can take, Jordan writes, is to make it clear that unethical behavior will not be tolerated. *About Finance. 6*(13), p. 53.

Pinkham, P. (2006, March 10). Builder sentenced in fraud case; IRS industry probe has run for 6 years. *Florida Times – Union (Jacksonville),* p. B-1.

Staff. (2006, May 5). Six face charges in big dig concrete probe. *The Providence Journal (Rhode Island),* p. A-08.

Sutner, S. (2006), May 5. 6 *Big dig concrete suppliers arrested; Company was a sub at Worcester school*, p. A1.

2007

Honeyman, C. (2007, September 6). Commentary: For builders, integrity is a code. *Daily Journal of Commerce (Portland, OR)*.

2008

Carlsen, R. (2008). Construction industry faces ethical challenges, exec says. *Engineering News Record (ENR).* December 12, 2008. Retrieved from www.enr.com

Carlson, S. (2008, September 9). After bumps and bribery Charges, Frank Gehry's library opens at Princeton. *The Chronicle of Higher Education*.

Fisch, M. (2008, July 15). Five Lewis Library contractors plead guilty to bribery investigation. More than $100K paid to Skanska construction manager in exchange for contracts. The Daily Princetonian.

Mader, B. (2008, October). Certificate program takes aim at ethics. *Contractor Magazine.*

Nall, J. (2008, September 12). Contractor fraud as prevalent as it was immediately after Katrina? *New Orleans City Business (New Orleans, LA).*

Rashbaum, W. K. (2008, February 9). U. S. makes strong move against reputed mobsters; 87 people are charged in decades of crimes. *The International Herald Tribune*.

Staff. (2008). Construction contractors follow defense peers in ethics push. *Engineering News Record (ENR), 260(*16), p. 12.

2009

Coultras, J. (2009, December). Bribery and gratuity roundup. *Federal Ethics Report 16*(12), p. 16.

Federal Bureau of Investigation (FBI). (2009, March 20). *Former construction project manager indicted for bribery and bank fraud scheme.* Newark Division.

Federal Bureau of Investigation (FBI). (2009, May 27). *Company sentenced on big dig fraud and false statements scheme.* Boston Division.

Federal Bureau of Investigation (FBI). (2009, September 14). *Company sentenced in big dig fraud and false statements scheme.* Boston Division.

Henry, W. P. (2009, July). Addressing corruption in our engineering/construction industry. *Leadership and Management in Engineering, 47(1),* pp. 101-102.

Office of Public Affairs. Department of Justice. (2009, November 17). *President Obama establishes interagency financial fraud enforcement task force.*

Office of the Press Secretary. The White House. (2009, November 17). *Executive order 13519 – establishment of the financial fraud enforcement task force.*

Staff. (2009, June 17). Stimulus windfall could boost fraud. *Engineering News Record (ENR).*

U.S. Attorney's Office. (2009, August 11). *Construction project manager pleads guilty to mail fraud and money laundering.* Middle District of Tennessee.

2010

Bagli, C. V. & Eligon, J. (2010, July 28). Firm guiding construction stole millions, officials say. *The New York Times.* p. 22.

Clevenger, A. (2010, September 23). Director of construction group indicted. *Charleston Gazette (West Virginia).* p. 1.

Cox, T. (2010, July 7). Blagojevich fundraising linked to tollway project. *Chicago Daily Herald,* p. 15.

Eligon, J. (2010, April 8). For executives in concrete testing case, a sentencing and a suicide attempt. *The New York Times.* p. 26.

Federal Bureau of Investigation (FBI). (2010, March 8). *Owners of two marble and stone contracting companies plead guilty to evading taxes on profits from collusive bidding scheme.* New York Field Office.

Federal Bureau of Investigation (FBI). (2010, June 22). *Manhattan U.S. attorney charges construction manager for Touro College with $2 million commercial kickback scheme.* New York Field Office.

Federal Bureau of Investigation (FBI). (2010, July 19). *Owner of New Jersey – based construction company pleads guilty to conspiring to defraud Charlie Brown's and P. C. Richard & Son.* Newark Division.

Federal Bureau of Investigation (FBI). (2010, August 16). *Former owner of Pennsylvania company pleads guilty to largest disadvantaged business enterprise fraud in USDOT history.* Philadelphia Division.

Federal Bureau of Investigation (FBI). (2010, September 8). *Bobby W. Ferguson indicted for fraud, money laundering, obstruction of justice, and conspiracy to defraud the United States.* Detroit Division.

Federal Bureau of Investigation (FBI). (2010). *Investigative programs. Organized crime.* Organized Crime Division.

FMI. (2010). *Ethics programs: Federal imperative, cultural opportunity*. Retrieved from www.fminet.com

Rashbaum, W. K. (2010, November 29). *Construction giant admits fraud over minority firms.*

U.S. Attorney's Office. (2010, July 22). *Developer sentenced to 10 years in prison in construction fraud scheme Robert B. Surles to join co-defendants in prison*. June 22, 2010. Atlanta Division.

Zeller, G. (2010, December 15). New York law eyes off-the-books frauds. *Long Island Business News (New York).* p. 1.

2011

El-Ghobashy, T. (2011, May 6). Subcontractors charged in scheme. *The Wall Street Journal*, p. 20.

Federal Bureau of Investigation (FBI). (2011, February 9). *Former MetroHealth construction manager sentenced for role in bribery scheme.* Cleveland Division.

Federal Bureau of Investigation (FBI). (2011, September 1). *Construction company sentenced to pay $5 million for clean water act violation. Employees illegally discharged pollutants into the San Joaquin River over the course of several years.* San Francisco Division.

Federal Bureau of Investigation (FBI). (2011, November 11). *Seven Krahl construction executives and employees and two others indicted in alleged billing fraud and kickback scheme.* Chicago Division.

Federal Bureau of Investigation (FBI). (2011, December 20). *Six plead guilty in wide–ranging construction fraud scheme.* Newark Division.

Giambusso, D. (2011, September 13). Newark corruption trial: Cory Booker warned ex-deputy mayor to stay away from "inappropriate" behavior. *The Star–Ledger.* Retrieved from www.newarkstarledger.com

Rubin, D. (2011, November 21). New delays in two high-profile construction criminal cases. *Engineering News Record (ENR),* p. 1.

Staff. (2011, May). News Briefs. Six engineering, design, and construction firms included on ethics list. *Civil Engineering Magazine (ASCE).*

Staff. (2011, November 3). *Examination of contractors' business practices could save lives*. Retrieved from www.contafy.com

2012

Department of Justice (DOJ). (2012, December 27). *Caddell Construction Co. commits to pay $2 million penalty in agreement to resolve criminal fraud violations.* Office of Public Affairs. Department of Justice.

Federal Bureau of Investigation (FBI). (2012, February 14). *Two area contractors charged with fraud involving minority and women set – asides for government construction contracts.* Chicago Division.

Federal Bureau of Investigation (FBI). (2012, April 12). *Eleven individuals, including members and associates of the Genovese organized crime family, indicted.* New York Field Office.

Federal Bureau of Investigation (FBI). (2012, April 24). *Construction giant Lend Lease (Bovis) charged with defrauding clients in three separate schemes and will pay over $50 million and institute comprehensive reforms. Former principal in charge of Bovis' New York office pleads guilty to fraud charge, faces up to 20 years in prison.* New York Field Office.

Federal Bureau of Investigation (FBI). (2012, October 4). *Owner of Middlesex County construction company indicted for paying $350,000 in cash bribes and kickbacks. Payoffs connected to millions of dollars in public and private construction contracts.* Newark Division.

Hennelly, B. (2012). *City's construction giants face criminal probe for billing fraud*. WNYC.

Jones, D. (2012, September 1). Combatting Construction Fraud. A look at prosecutors' widening probe into overbilling and corruption by contractors. *The Real Deal.*

Secret, M. (2012, November 21). No prison time for former New York City construction executive in overbilling scheme. *The New York Times*, p. 25.

Tuchman, J. L. (2012, January 23). William G. Dorey: Raising the bar on ethics and compliance. *Engineering News Record (ENR).* Retrieved from enr.com

Urso, L. (2012). *The importance of auditing in an anti-fraud world. Construction fraud; detecting, controlling, & auditing*. 23rd annual association of certified fraud examiners (ACFE).

2013

Department of Justice (DOJ). (2013, February 21). *Three charged in scheme to defraud New York City school construction authority of over $32 million; Two others charged with structuring to conceal fraud. Over $3 Million in illicit proceeds funneled to Pakistani amusement park.* Eastern District of New York. U.S. Attorney's Office.

Department of Justice (DOJ). (2013, May 21). *Former high-ranking official at NYC Department of Housing Preservation and Development sentenced to 18 months in prison. Director of construction services for HPD took $30,000 in bribes from HPD contractor*. Eastern District of New York.

Department of Justice (DOJ). (2013, June 19). *Former supervisory official at NY department of housing preservation & development sentenced to 18 months' imprisonment for accepting $100,000 bribe.* East District of New York.

Department of Justice (DOJ). (2013, July 19). *Owner of New York construction company indicted for tax fraud. Office of Public Affairs*. Department of Justice.

Department of Justice (DOJ). (2013, August 1). *Bricklayers union shop steward pleads guilty to accepting bribes. Four related defendants indicted for engaging in prevailing wage fraud scheme to defraud the NYC School Construction Authority.* East District of New York. U.S. Attorney's Office.

Ethics Resource Center ISBN 978-0-916152-22-2. (2013). *National business ethics survey of the U.S. construction industry. Gauging industry practices & identifying ethics challenges.* Ethics Resource Center (ERC).

Federal Bureau of Investigation (FBI). (2013). *Former owner of Morgan Construction Company admits role in bid-rigging scheme.* Newark Division.

Hoke, T. (2013, June). A question of ethics. Keeping the playing field level. *Civil Engineering Magazine (ASCE).*

Staff. (2013, February 26). NY Contractors Face $32M Fraud Case. *D+D News*.

Staff. (2013, March 15). Whistleblower and United States attorney achieves settlement of construction fraud action. *Marketwire.*

U.S. Attorney's Office. (2013, March 15). *Two brothers charged with defrauding the Department of Veterans Affairs.* Western District of New York. Buffalo Division. U. S. Attorney's Office.

U.S. Attorney's Office. (2013, May 21). *Idaho contractor indicted on federal charges of conspiracy, money laundering, obstruction of justice, wire, and tax fraud. Government seeking forfeiture of more than $9 million from treasure valley woman.* District of Idaho. U. S. Attorney's Office.

U. S. Attorney's Office. (2013, September 26). *Former vice president of Alberici Constructors pleads guilty to fraud charges.* East District of Missouri. U.S. Attorney's Office.

Velsey, K. (2013, December 18). Manhattan D. A. levels charges in major electrical contracting kickback scheme. *New York Observer*. Retrieved from www.observer.com

2014

Bagli, C. V. (2014, May 1). Building firm pleads guilty to defrauding its customers. *The New York Times,* p. 17.

Department of Justice (DOJ). (2014, January 15). *Former owner of Connecticut construction company sentenced in largest disadvantaged business enterprise fraud in nation's history.* Philadelphia Division.

Department of Justice (DOJ). (2014, March 21). *Utah construction company to pay government to settle alleged false claims in connection with program for small and disadvantaged businesses.* Office of Public Affairs.

Department of Justice (DOJ). (2014, April 24). *Former chief investment officer of construction supply company sentenced to 37 months in prison for bank fraud scheme.* Eastern District of New York. U.S. Attorney's Office.

Department of Justice (DOJ). (2014, July 14). *Former chief operating officer and co-owner of Schuylkill Products sentenced in largest disadvantaged business enterprise fraud in nation's history.* Justice Department Documents and Publications.

Federal Bureau of Investigation (FBI). (2014, April 7). *Connecticut construction company agrees to pay $2.4 million, admits making false statements to U.S.* New Haven Division.

Federal Bureau of Investigation (FBI). (2014, May 1). *McHugh Construction to pay $12 million to settle contract fraud claims by U. S. and Illinois on seven area public works projects.* Chicago Division.

Federal Bureau of Investigation (FBI). (2014, November 21). *Former Choctaw Nation executive director of construction found guilty of conspiracy to commit bribery, theft of federal funds by tribal officer, and money laundering.* Oklahoma City Division.

Federal Bureau of Investigation (FBI). (2014, December 4). *Former Bechtel executive pleads guilty in connection with $5.2 million kickback scheme.* Baltimore Division.

Federal Bureau of Investigation (FBI). (2014, December 15). *Forrester Construction Company agrees to pay $2.15 million. Admits abuse of certified business enterprise program. Company also agrees to extensive corporate remediation and compliance measures.* Washington DC Field Office.

Hoke, T. (2014, February). A question of ethics. Improper use of confidential information. *Civil Engineering Magazine (ASCE).*

Minogue, A. (2014, July 7). A New York Story. *Building Magazine.*

2015

Clifford, S. (2015, May 21). Construction company says it bilked clients. *The New York Times,* p. 23.

Department of Justice (DOJ). (2015, May 8*). School construction authority general contractor and his employees convicted of multiple crimes for participating in long-running scheme to deprive workers of the prevailing wage.* Eastern District of New York.

Department of Justice (DOJ). (2015, May 16). *Local construction company settles allegations of fraud involving a disadvantaged business enterprise.* Middle District of Tennessee.

Department of Justice (DOJ). (2015, May 20). *Hunter Roberts Construction to pay more than $7 million in penalties and restitution for engaging in a fraudulent overbilling scheme.* Eastern District of New York. U. S. Attorney's Office.

Department of Justice (DOJ). (2015, June 8). *Construction service company owner pleads guilty to fraud conspiracy and tax violation involving contract with the New York Power Authority.* Office of Public Affairs.

Department of Justice (DOJ). (2015, November 12). *Co-owner of construction company sentenced for defrauding service-disabled veteran-owned small business program.* District of Kansas.

Department of Justice (DOJ). (2015, November 24). *Granite Construction to pay more than $8 million in forfeiture and penalties for engaging in a scheme to fraudulently claim credit for work performed by a minority owned business.* Eastern District of New York. U. S. Attorney's Office.

Federal Bureau of Investigation (FBI). (2015, March 23). *Former Bechtel executive sentenced to 42 months in prison and ordered to forfeit $5.2 million in connection with kickback scheme.* Baltimore Division.

Federal Bureau of Investigation (FBI). (2015, April 14). *Silent business partner of organized crime – controlled World Trade Center contractor indicted for scheme to defraud the Port Authority and related crimes. Lawyer and accountant also indicted.* New York Field Office.

Federal Bureau of Investigation (FBI). (2015, July 13). *Mercer County, New Jersey woman sentenced to 37 months in prison for paying $671,000 in bribes to fraudulently obtain government construction contracts.* Newark Division.

Federal Bureau of Investigation (FBI). (2015, August 7). *Former President of Chicago construction company indicted in $1.9 million union fraud scheme.* Chicago Division.

Federal Bureau of Investigation (FBI). (2015, October 28). *Former business manager and two contractors charged with theft from labor union, unlawful labor payments, fraud and money laundering.* Washington DC Field Office.

Federal Bureau of Investigation (FBI). (2015, November 23). *Monroe Construction Company, its president, and four co-defendants sentenced for government contract fraud.* Charlotte Division.

Smith, S. (2015, January 7). CityLimits.org articles examine role of private construction monitors in NYC. *EHS Today.*

Staff. (2015, May 20). Hunter Roberts scams schools in New York. *Construction Dive*. Retrieved from https://www.constructiondive.com/news/ny-construction-firm-admits-to-bilking-clients-on-major-projects/399624/

Staff. (2015, December 16). MGM Springfield contractor Tishman Construction to pay $20 million in fraud case. *Real Estate Monitor Worldwide*.

U. S. Department of Justice. (2015, December 10). *Tishman Construction charged with fraud; to pay more than $20 million in restitution and penalties for defrauding clients in a ten-year overbilling scheme.*

2016 (Through April 30th)

Department of Justice (DOJ). (2016, January 11). *Former Idaho construction company president sentenced to prison for fraud scheme.* Office of Public Affairs.

Department of Justice (DOJ). (2016, March 28). *Orlando woman indicted for scheme to allow construction contractors to conceal the employment of undocumented aliens and evade workers' compensation and payroll taxes.* Office of Public Affairs.

Department of Justice (DOJ). (2016, May 1). *Construction company owner charged with fraud. Charges include mail fraud, tax fraud, and transporting illegal aliens.* Office of Public Affairs.

Klimko, F. (2016, March 4). NY excavation company CEO faces felony insurance fraud charges. *BestWire.*

APPENDIX B2: CONTENT LISTING DATED AUGUST 1, 2016/QUOTES FROM THE 110 ARTICLES ON THE TOPIC OF INDUSTRY PERCEPTION "EVERYBODY DOES IT"

On a topic of confidentiality with regard to submitted bids:

> "Despite the third firm's reduced market share and its status as an unwitting victim in the scheme, authorities are surprised to hear the project manager contend that he acted in his company's best interests. They can find no evidence that the manager received any personal benefit in exchange for this participation, and the manager maintains that his actions were intended to help sustain a business that had been buckling under pressures of overcommitment and poor resource management". p. 46.
>
> Hoke, T. (2014, February). (About/Ethics). A question of ethics. Improper use of confidential information. *Civil Engineering Magazine (ASCE), 84*(2), 46-47. Retrieved from https://www.asce.org/question-of-ethics-articles/feb-2014/

> "Subsequent to his discovery of this systematic fraudulent scheme and endemic corruption in the construction industry". p. 1.

> "Recent successful prosecutions are testimony to a long overdue change of direction in the abysmal state of construction monitoring". p. 1.
>
> Staff. (2013, March 15). Whistleblower and United States attorney achieves settlement of construction fraud action. *Marketwire.*

On the topic of pay to play:

> "Several of them noted that the system of exchanging contributions for access had been in place well before they became involved, and they expressed the cynical view that this was merely business as usual for their locality". p. 1.
>
> Hoke, T. (2013). A question of ethics. Keeping the playing field level. *Civil Engineering Magazine (ASCE).* Retrieved from https://www.asce.org/question-of-ethics-articles/

> "More construction employees indicated that they feel pressure to compromise standards; they see more misconduct; and when they report wrongdoing to management, they are far more likely to experience retaliation". p. 2.

> "The larger the company, the more likely employees were to face pressures to compromise standards, observe misconduct, and experience retaliation for reporting wrongdoing". p. 5.

"Given this complexity, watchdog groups have observed that the construction industry is high risk for corruption, particularly because they often are called upon to operate in unstable economic environments with difficult regulatory oversight by sometimes unpredictable public officials". p. 6.

"Pressure to compromise standards or the law in order to do one's job". p. 6.

"Observed misconduct – either a violation of company standards or the law within the past 12 months at work (either in a corporate office or on a job site)". p. 12.

"The same finding was true for the construction industry. Of the construction employees who reported feeling pressure, 94 percent claimed to have observed some form of misconduct". p. 12

"Construction employees, however, were most likely to indicate that their sources of pressure were the very nature of the job itself (e.g. adherence to a project timeline, or pressure to stay within budget). This is perhaps an indicator of the significant pressure that is characteristic of the work undertaken by the construction industry". p. 13

"Rather, employees indicated that the above were pressures to compromise their company's standards or the law in order to do the job. In other words, it may well be that the highly – pressurized environment that is inherent to the construction industry may be so intense that it leads employees to consider compromising standards". p. 14

"Unfortunately, employees in this study revealed that observed misconduct is more commonplace in the construction industry than it is in other corporations across the U.S." p. 15.

"Despite the fact that levels of misconduct are higher in the construction industry". p. 16.

"In the construction industry, employees who experienced retaliation were far more likely to say that they would look the other way if they saw their employer doing something questionable". p. 18.

"In the construction industry, ethics challenges increase along with company size. For instance, pressure to compromise standards becomes more prevalent as organization size increases. p. 20.

"Employees in public construction companies are significantly more likely than their peers in privately-held organizations to feel pressure to compromise standards, to observe misconduct, and to experience retaliation for reporting wrongdoing". p. 22.

"Employees in public construction companies also stood out in that they tended to express a greater tolerance for conduct that could be considered questionable, based on typical company standards and other regulations". p. 23.

“More than one in four (26 percent) of middle managers felt pressure to compromise organizational standards of conduct, and two out of three (67 percent) observed some form of misconduct in the previous year”. p. 33.

“Supervisors in construction companies indicate that they feel more pressure to compromise standards in order to do their jobs”. p. 34.

“Overall, supervisors who work exclusively in the company office have more ethics and compliance challenges; they feel more pressure, observe more misconduct, and are more likely to not report wrongdoing when they observe it”. p. 35.

“The industry, by its very nature, is characterized by significant pressure to compromise standards of conduct and integrity”. p. 36.

“Combat pressure inherent to the industry”. p. 39.

> Ethics Resource Center (ERC) ISBN 978-0-916152-22-2. (2013). *National business ethics survey of the U.S. construction industry. Gauging industry practices & identifying ethics challenges.* Retrieved from www.ethics.org

“Bribery and fraud in the construction industry remain a concern, said District Attorney Cyrus Vance in a statement”. p. 1.

“We have identified an industry-wide corrupt practice involving the payment of bribes and kickbacks that ultimately results in increased costs to the public and negatively impacts the quality of materials and the integrity of the work performed, “ said Robert E. Van Etten, the inspector general of the Port Authority of NY & NJ”. p. 1.

> Velsey, K. (2013, December 18). Manhattan D.A. levels charges in major electrical contracting kickback scheme. *New York Observer.* Retrieved from http://observer.com/2013/12/d-a-levels-charges-against-17-individuals-and-15-companies-in-major-electrical-contracting-kickback-scheme/

“billing fraud is widespread in the city’s construction industry”. p. 1.

“While we understand these practices were common in the industry in New York, we should always hold ourselves above the industry reflecting our strong values and high ethical standards, Steve McCann, a group executive officer at Lend Lease”. p. 1.

> Jones, D. (2012, September 1). Combatting construction fraud. *The Real Deal.* Retrieved from https://therealdeal.com/magazine/new-york-september-2012/combating-construction-fraud/

“At a best-practices forum in Denver last October, Grewcock said the work they are doing can “elevate the industry” and mitigate the perception that it is corrupt”. p. 1.

Tuchman, J. L. (2012, January 23). *William G. Dorey: Raising the bar on ethics and compliance*. Retrieved from www.enr.com

Port Authority Inspector General Van Etten stated…"Under-the-table deals with employees, at the cost of clients, that continue to plague the regional construction industry are simply unacceptable". p. 1.

Federal Bureau of Investigation (FBI). (2012, April 24). *Construction giant Lend Lease (Bovis) charged with defrauding clients in three separate schemes and will pay over $50 million and institute comprehensive reforms. Former principal in charge of Bovis' New York office pleads guilty to fraud charge, Faces up to 20 years in prison.* New York Field Office. Retrieved from https://www.justice.gov/

"At the heart of the probe is what prosecutors say is an industry-wide practice known as "8 and 2" in which construction companies fraudulently bill clients for hours not worked by labor foremen". p. 1.

"Loretta Lynch, U.S. Attorney for the Eastern District of New York, had a warning for the city's construction industry. The message should be clear to all who are engaged in similar contract billing fraud: You are in our sights, she said. And the defense that everyone does it will not be a shield against law enforcement". p. 1.

Federal Bureau of Investigation (FBI). (2012, April 24). Homepage. *Former principal in charge of Bovis' New York office pleads guilty to fraud charge, faces up to 20 years in prison.* New York Field Office. Retrieved from https://www.justice.gov/

"It is clear that the industry has an image problem. In 2004, FMI conducted a survey of 270 owners, architects, construction managers, contractors – 61 percent of survey respondents thought that the industry was "tainted" by unethical acts. Further, there is systemic failure within the industry to prevent unethical behavior: 84 percent reported that they had experienced, encountered or observed construction industry-related acts or transactions that they would consider unethical in the past year". p. 2.

"the CIECI was primarily concerned with improving the image of the construction industry at large and investigating the way ethics and compliance issues fleck through operations and corporate governance". p. 7.

Fails Management Institute (FMI). (2010). Homepage. *Ethics Programs: Federal Imperative, Cultural Opportunity.* Retrieved from https://www.fminet.com

"Where I depart from the author, however, is his assertion that, "In the construction industry it is not a question of if a fraud will occur but when it will occur, how soon it will be detected, and how much will it cost". p. 1.

Honeyman, C. (2007, September 6). Commentary: For builders, integrity is a code. *Daily Journal of Commerce* (Portland, OR). Retrieved from https://djcoregon.com/

"Despite more attention to illegal and unethical actions in the construction industry, individuals still "cross the line" into questionable areas of business practice – whether due to temptation, market pressure, or greed. "it's really systemic in the industry," says Theresa Carlson, supervisor of the FBI's white collar crime division in Birmingham, Ala. "There is little oversight and accountability". p. 2.

Staff. (2005, November 7). On the fraud front: One fed speaks up. *Engineering News Record,* Cover Story; Ethics; *255*(18), p. 30.

"Some of the harsh legislative, executive and judicial action could be nipped in the bud if there was a strong public perception that the industry is seriously trying to clean up its own act…There needs to be an industry-wide code of conduct that at least provides a road map of acceptable and unacceptable behavior". p. 2.
"Over 80% of owners, architects, construction managers, contractors and subcontractors responding to an FMI survey last year said they had experienced, encountered or observed unethical construction industry related acts or transactions during the previous 12 months and 61% said they though the industry was tainted by such acts." p. 13.

Staff. (2004, May 31). The Industry needs to take aim on unethical behavior. *Engineering News Record*. Retrieved from www.enr.com

"Though the construction industry has an image problem when it comes to a desirable career path, it has a reality problem when it comes to ethics. In a recent FMI/CMAA study, it was shown that, of those surveyed (A/E/Cs):

- 81% had either an informal ethics program (41%) or no program (40%).
- 93% strongly agreed or agreed there should be more ethics training available;
- 85% agreed or strongly agreed there should be an industry standard code of ethics;
- 95% strongly agreed or agreed that industry associations should take a leadership role to help ensure ethical codes are available.

Holland, M. M. (2005). Stronger ethics codes. *Engineering News Record (ENR), 255*(23), p. 5.

"It's pretty clear that the construction industry generates the most business and corruption cases in the U.S.". p. 30.

"There are infinite ways to defraud the government and others of money. Crimes do not have to involve government dollars; it's a crime to rig bids on a private job too. This is how business is done. It's epidemic. How do we find out? It's usually the odd man out,

disgruntled employees, ex-spouses or whistleblowers who tell us about crimes. I'd like to see more whistleblowers come forward". p. 30.

"The defense in every case is "we were just trying to stay in business". p. 30.

Staff. (2005, November 7). On the fraud front: One fed speaks up. *Engineering News Record,* Cover Story; Ethics; *255*(18), p. 30.

APPENDIX B3: CONTENT LISTING DATED AUGUST 1, 2016/

QUOTES FROM THE 110 ARTICLES ON THE TOPIC OF SAFETY

On the topic of Safety:

"In the construction industry, a lax approach to following proper procedures may be characteristic of a much more dangerous disregard for workers' safety," said Vance. "Dishonest business practices hinder oversight and create potentially life-threatening hazards for workers and residents". p. 1.

> New York County District Attorney. (2016, March 1). Manhattan district attorney, Cyrus Vance, Jr. *NY excavation company CEO faces felony insurance fraud charges.* Retrieved from www.manhattanda.com. p. 1.

"recent scandal over concrete testing at city sites". p. 1.

"But sometimes, corruption or a callous regard for human life will win, with deadly consequences. Such was the case of the decontamination and deconstruction of the Deutsche Bank at 130 Liberty Street, adjacent to the World Trade Center site". p. 1.

> Smith, S. (2015, January 7). *CityLimits.org articles examine role of private construction monitors in NYC*. Retrieved from www.ehstoday.com

"In 2008, Bovis benefitted from similar forbearance by Manhattan District Attorney Robert Morgenthau for the firm's role in the Deutsche Bank Building fire. Two firefighters were killed, and the DA's investigation determined that Bovis was partially responsible as the prime contractor. In that case Bovis was granted a non-prosecution agreement. It paid the families of the firefighters $16 million and agreed to reform its management of subcontractors". p. 1.

> Hennelly, B. (2012). *City's Construction Giants Face Criminal Probe for Billing Fraud.* WNYC. Retrieved from: https://www.wnyc.org/story/226020-citys-construction-giants-face-criminal-probe-billing-fraud

"Lend Lease, formerly known as Bovis Lend Lease, signed an earlier agreement with the Manhattan district attorney's office in connection with the deaths of two firefighters in the former Deutsche Bank building in 2007. Under the agreement, the company acknowledged safety failures". p. 25.

> Secret, M. (2012, November 21). No prison time for former New York City construction executive in overbilling scheme. *New York Times.* Retrieved from www.nytimes.com

"Untold accidents occur that cause employees to be injured or lose their lives". p. 1.

> Staff. (2011, November 3). Homepage. *Examination of contractors' business practices could save lives.* Retrieved from www.prnewswire.com

"the negligent homicide and manslaughter trial of crane company executive James F. Lomma, 65, in a 2008 fatal crane collapse in Manhattan". p. 1.

> Rubin, D. (2011, November 21). New delays in two high-profile construction criminal cases. *Engineering News Record*. Retrieved from www.enr.com

"Ethical violations also have very real ramifications for safety and quality – use of unspecified materials or shortcuts in procedure can compromise structural integrity in the long-term". p. 1.

> Fails Management Institute (FMI). (2010). Homepage. *Ethics Programs: Federal Imperative, Cultural Opportunity.* Retrieved from https://www.fminet.com

"you cannot routinely falsify vital safety tests without severe consequence." Assistant District Attorney Diana Florence, Manhattan. p. 1.

"The message needs to be sent that integrity matters, tests matter, the building code matters, " Ms. Florence added. "While it is true most building tested safe, you also know that had the concrete continued to be poured at the Freedom Tower using Testwell's recipe, it would not have supported the weight of that iconic structure, and the consequences would have been devastating". p. 1.

> Eligon, J. (2010, April 8). Assistant District Attorney Diana Florence, Manhattan. *For executives in concrete testing case, a sentencing and a suicide attempt.* Retrieved from www.nytimes.com

"Six men worked for the Big Dig's largest concrete supplier were arrested yesterday on federal charges accusing them of falsifying records to hide the inferior quality of concrete delivered to the massive highway project". p. 1.

> Staff. (2006, May 5). Homepage. Six face charges in big dig probe. *The Providence Journal* (Rhode Island). Retrieved from www.providencejournal.com

"The Eastern Massachusetts-based concrete contractor that had six top managers and former employees indicted yesterday on federal charges of falsifying records to hide shoddy concrete supplied to the Big Dig has been the main concrete supplier to this city's $96 million vocational school project". p. 1.

> Sutner, S. (2006, May 5). Homepage. Six big dig concrete suppliers arrested; Company was a sub at Worcester school. *Engineering News Record*. Retrieved from www.enr.com

APPENDIX C: SURVEY AND DATA COLLECTION PACKET

APPENDIX C1: ACCE PROGRAMS LISTING

ACCE AMERICAN COUNCIL FOR CONSTRUCTION EDUCATION
PARTNERSHIP FOR EXCELLENCE

There are 72 Bachelor's Degree Programs that are accredited by ACCE in accordance with the standards. Shown below are the names of the Institution, the Construction Program accredited with the link to the Program, the Program Leaders' email link, and the Board Action for the last accreditation. Standards by which these programs are evaluated for accreditation can be found in Document 103B, located on the ACCE website.

BACCALAUREATE DEGREE

Alfred State College College of Technology Construction Management Alfred, NY 14802 Last Accreditation 02/2014 - expires 07/2020	**Arizona State University** School of Sustainable Engineering and the Built Environment Construction Management and Technology Tempe, AZ 85287-0204 Last Accreditation 07/2015 - expires 07/2021
Auburn University College of Architecture, Design, and Construction Building Construction Auburn, AL 36849-5315 Last Accreditation 07/2014 - expires 07/2020	**Ball State University** Department Construction Management and Interior Design Construction Management Muncie, IN 47306 Last Accreditation 02/2017 - expires 02/2023
Boise State University College of Engineering Construction Management Boise, ID 83725 Last Accreditation 07/2019 - expires 07/2025	**Bowling Green State University** College Technology, Architecture & Applied Engineering Construction Management Bowling Green, OH 43403-0301 Last Accreditation 07/2018 - expires 07/2024
Bradley University College of Engineering Construction Management Peoria, IL 61625 Last Accreditation 07/2017 - expires 7/2023	**California Baptist University** College of Engineering Construction Management Riverside, CA 92504 Initial Accreditation 07/2015 - expires 07/2020
California State University, Chico College of Engineering, Computer Science & Construction Management Construction Management Chico, CA 95929 Last Accreditation 02/2016 – expires 02/2022	**California Polytechnic State University, San Luis Obispo** College of Architecture & Environmental Design Construction Management San Luis Obispo, CA 93407 Last Accreditation 07/2014 – Expires 07/2020
California State University, Fresno College of Engineering Construction Management Fresno, CA 93740 Last Accreditation 02/2014 - expires 07/2020	**California State University, Long Beach** College of Engineering Construction Management Long Beach, CA 90840 Last Accreditation 07/2017 - expires 07/2023

California State University, Northridge College of Engineering and Computer Science Construction Management Northridge, CA 95819-6029 Last Accreditation 07/2015 - expires 07/2021	**California State University, Sacramento** College of Engineering and Computer Science Construction Management Sacramento, CA 95819-6029 Last Accreditation 02/2019 - expires 02/2025
Central Connecticut State University School of Engineering, Science and Technology Construction Management New Britain, CT 06050 Last Accreditation 07/2018 – expires 07/2024	**Central Washington University** College of Education and Professional Studies Construction Management Ellensburg, WA 98926-7584 Last Accreditation 07/2015 - expires 07/2021
Clemson University College of Architecture, Arts and Humanities Construction Science and Management Clemson, SC 29634 Last Accreditation 07/2019 - expires 07/2025	**Colorado State University** College of Health and Human Sciences Construction Management Fort Collins, CO 80523 Last Accreditation 02/2016 - expires 2/2023
Drexel University College of Engineering Construction Management Philadelphia, PA 19104 Last Accreditation 02/2016 - expires 02/2022	**East Carolina University** College of Engineering and Technology Construction Management Greenville, NC 27858 Last Accreditation 07/2016 - expires 07/2022
Eastern Kentucky University College of Business and Technology Construction Management Richmond, KY 40475-3102 Last Accreditation 07/2016 - expires 07/2022	**Eastern Michigan University** School of Engineering Technology Construction Management Ypsilanti, MI 48197 Last Accreditation 07/2015 - expires 07/2021
Ferris State University School of Built Environment Construction Technology and Management Big Rapids, MI 49307-2292 Last Accreditation 02/2019 - expires 02/2025	**Florida Institute of Technology** College of Engineering and Science Construction Management Melbourne, FL 32901 Initial Accreditation 02/2019 - expires 02/2024
Florida International University College of Engineering and Computing Construction Management Miami, FL 33174 Last Accreditation 2/2020 - expires 02/2026	**Georgia Southern University** College of Engineering and Computing Construction Management Statesboro, GA 30460 Last Accreditation 02/2015 - expires 02/2021
Illinois State University College of Applied Science and Technology Construction Management Normal, IL 61790-5100 Last Accreditation 07/2015 - expires 07/2021	**Indiana State University** College of Technology Construction Management Terre Haute, IN 47809 Last Accreditation 02/2018 - expires 02/2024
Indiana University Purdue University Indianapolis School of Engineering and Technology Construction Management Indianapolis, IN 46204 Initial Accreditation 07/2019 - expires 07/2024	**John Brown University** Division of Engineering and Construction Management Construction Management Siloam Springs, AR 72761 Last Accreditation 07/2016 - expires 07/2022

Kansas State University College of Engineering Construction Science and Management Manhattan, KS 66506 Last Accreditation 02/2016 - expires 02/2022	**Kennesaw State University** School of Architecture and Construction Management Construction Management Marietta, GA 30060-2896 Last Accreditation 02/2015 - expires 02/2021
Kent State University College of Architecture and Environment Design Construction Management Kent, Ohio, 44242-0001 Initial Accreditation 02/2018 - expires 02/2023	**Lamar University** College of Business Construction Management Beaumont, TX 77710 Last Accreditation 07/2014 -expires 07/2020
Louisiana State University College of Engineering Construction Management Baton Rouge, LA 70822 Last Accreditation 07/2017 - expires 07/2023	**Michigan State University** School of Planning, Design, and Construction Construction Management East Lansing, MI 48824 Last Accreditation 02/2016 - expires 02/2022
Michigan Technological University College of Civil and Environmental Engineering Construction Management Houghton, MI 79931 Last Accreditation 02/2016 - expires 02/2022	**Minnesota State University, Mankato** College of Science, Engineering and Technology Construction Management Mankato, MN 56001 Last Accreditation 07/2016 - expires 07/2022
Minnesota State University, Moorhead College of Business & Innovation Construction Management Mankato, MN 56001 Last Accreditation 07/2016 - expires 07/2022	**Mississippi State University** College of Architecture, Art, and Design Building Construction Science Mississippi State, MS 39762 Initial Accreditation 02/2020 - expires 02/2025
Missouri State University College of Architecture, Art, and Design Construction Management Springfield, MO 65897 Last Accreditation 02/2017 - expires 02/2023	**North Carolina A&T State University** College of Science and Technology Construction Management Greensboro, NC 27411 Last Accreditation 02/2020 - expires 02/2026
North Dakota State University College of Engineering Construction Management Fargo, ND 58105 Last Accreditation 02/2015 - expires 07/2021	**Northern Arizona University** College of Engineering, Informatics, & Applied Sciences Construction Management Flagstaff, AZ 86011 Last Accreditation 02/2018 - expires 02/2024
Northern Kentucky University College of Business Construction Management Highland Heights, KY 41099-0839 Last Accreditation 02/2017 - expires 02/2023	**Ohio State University** College of Food, Agricultural, Environmental Sciences Construction Systems Management Columbus, OH 43210 Initial Accreditation 02/2015 - expires 07/2020
Oregon State University College of Engineering Construction Management Corvallis, OR 97331-2302 Last Accreditation 02/2015 - expires 02/2021	**Pennsylvania College of Technology** School of Construction and Design Technologies Construction Management Williamsport, PA 17701-5799 Last Accreditation 07/2019 - expires 07/2025

Purdue University Purdue Polytechnic Institute Construction Management Technology West Lafayette, IN 47907-1414 Last Accreditation 07/2013 - expires 07/2020	**Roger Williams University** School of Engineering, Computing, Construction Construction Management Bristol, RI 02809-2921 Last Accreditation 07/2017 - expires 07/2023
Southern Illinois University, Edwardsville School of Engineering Construction Management Edwardsville, IL 62026-1803 Last Accreditation 07/2018 - expires 07/2024	**Texas A&M University** College of Architecture Construction Science College Station, TX 77843 Last Accreditation 02/2018 – expires 02/2024
Texas State University College of Science and Engineering Construction Science and Management San Marcos, TX 78666 Last Accreditation 02/2018 - expires 02/2024	**Tuskeegee University** School of Architecture and Construction Science Construction Science Tuskeegee, AL 30688 Initial Accreditation 07/2017 - expires 07/2023
University of Alaska, Anchorage Community & Technical College Construction Management Anchorage, AK 99508 Last Accreditation 02/2017 - expires 02/2023	**University of Arkansas at Little Rock** College of Engineering and Information Technology Construction Management Little Rock, AR 72204-1099 Last Accreditation 02/2016 - expires 02/2022
University of Cincinnati College of Engineering and Applied Science Construction Management Cincinnati, OH 45206 Last Accreditation 07/2017 - expires 07/2023	**University of Florida** College of Design, Construction and Planning Construction Management Gainesville, FL 32611 Last Accreditation 02/2016 - expires 02/2022
University of Houston College of Technology Construction Management Houston, TX 77204 Last Accreditation 07/2015 - expires 07/2021	**University of Louisiana, Monroe** College of Business and Social Sciences Construction Management Monroe, LA 71209 Last Accreditation 07/2015 - expires 07/2021
University of Maryland, Eastern Shore School of Business and Technology Construction Management Technology Princess Anne, MD 21853 Last Accreditation 07/2014 - expires 07/2021	**University of Nevada, Las Vegas** College of Engineering Construction Management Las Vegas, NV 89154-4015 Last Accreditation 07/2014 - expires 07/2020
University of North Florida College of Computing, Engineering and Construction Construction Management Jacksonville, FL 32224-2645 Last Accreditation 07/2014 - expires 07/2020	**University of Oklahoma** College of Architecture Construction Science Norman, OK 73019-0265 Last Accreditation 02/2020 - expires 02/2026
University of Southern Mississippi School of Construction and Design Construction Management Hattiesburg, MS 39406 Last Accreditation 07/2018 - expires 07/2021	**University of Texas at San Antonio** College of Architecture, Construction and Planning Construction Science and Management San Antonio, TX 78201 Last Accreditation 07/2019 - expires 07/2025

University of Washington College of Built Environments Construction Management Seattle, WA 98195 Last Accreditation 07/2019. - expires 07/2025	**University of Wisconsin, Stout** College of Science, Technology, Engineering, Mathematics and Management Construction Management Menomonie, WI 54751 Last Accreditation 07/2018 - expires 07/2024
Utica College School of Business and Justice Studies Construction Management Utica, NY 13502 Initial Accreditation 07/2015 - expires 07/2020	**Virginia Polytechnic Institute and State University** College of Architecture and Urban Studies Building Construction Blacksburg, VA 24061-0156 Last Accreditation 07/2017 - expires 07/2023
Washington State University College of Engineering and Architecture Construction Management Pullman, WA 99164-2220 Last Accreditation 02/2016 - expires 02/2022	**Wentworth Institute of Technology** College Architecture, Design and Construction Management Construction Management Boston, MA 02115 Last Accreditation 07/2019 - expires 07/2025

Updated April 23, 2020

Retrieved from https://www.acce-hq.org/accredited-degree -programs

APPENDIX C2: SURVEY

Commercial Construction Ethical Decision Making; Instructor Perspectives

The following survey pertains to your perceptions of instruction methods on ethical decision making for undergraduate construction management (CM) students in a baccalaureate program. For all questions below, please consider construction industry to be defined as commercial, meaning not residential.

Please answer each question. The survey should take approximately 30 minutes to complete.

What is your area of teaching? Please answer all applicable.

- ☐ Estimating
- ☐ Scheduling
- ☐ Project management
- ☐ Field management
- ☐ Laboratory
- ☐ Environmental Topics
- ☐ Safety
- ☐ Other

How many years have you taught CM courses? Please choose only one.

- ○ Less than 1 year
- ○ 1 year or more and less than 5 years
- ○ 5 years or more and less than 10 years
- ○ 10 years or more and less than 20 years
- ○ More than 20 years

Do you have at least 5 years of full-time project management or superintendent experience in construction?

- ○ Yes
- ○ No

Does your CM program require a standalone ethics course for undergraduate graduation?

- ○ Yes
- ○ No

Does your program include CM instructors teaching ethical decision making directly to students?

- ○ Yes
- ○ No

Commercial Construction Ethical Decision Making; Instructor Perspectives

Please indicate the techniques you use to teach ethical decision making?
Please answer all applicable.

- [ ] Case study
- [ ] Role Play
- [ ] Lecture
- [ ] Discussion
- [ ] Workshop
- [ ] I do not teach ethical decision making
- [ ] Other

Please indicate criterion you feel most important to be effective in teaching ethical decision making in construction. Please choose only one.

- ○ Actual events
- ○ Relevant
- ○ Believable
- ○ Not simplistic / Not sugar-coating potential real industry issues
- ○ I do not feel case studies are effective for this subject.

Please read the following example from literature including an "everyone does it" attitude:

""Loretta Lynch, U.S. Attorney for the Eastern District of New York, had a warning for the city's construction industry. The message should be clear to all who are engaged in similar contract billing fraud: You are in our sights, she said. And the defense that "everyone does it" will not be a shield against law enforcement". Construction Giant (name withheld) charged with defrauding clients in three separate schemes and will pay over $50 million and institute comprehensive reforms" (FBI, 2012, p. 3).

Please indicate if you perceive construction as having an "everyone does it" or "everybody's doing it" attitude with regard to ethical transgressions.

- ○ Yes
- ○ No
- ○ I don't know

Please read the following example from literature including a "systemic" theme:

"Despite more attention to illegal and unethical actions in the construction industry, individuals still "cross the line" into questionable areas of business practice – whether due to temptation, market pressure, or greed. "It's really systemic in the industry." says Theresa Carlson, supervisor of the FBI's white collar crime division in Birmingham, Ala. "There is little oversight and accountability"." "Engineering News Record, 2005, p. 26).

Please indicate if you perceive ethical transgressions to be "systemic" in construction.

- ○ Yes
- ○ No
- ○ I don't know

Please read findings included in a 2014 survey identifying construction to have "unique pressures", a theme found in literature:

"Rankings of Sources of Pressure by Intensity - Most to least
- Adhering to a project timeline
- Trying to keep a project on budget
- Meeting your personal financial obligations
- Ensuring the financial stability & success of your company
- Keeping your job
- Wanting to make your boss look good
- Advancing your career
- Committing safety violations
- Ignoring wrongdoing you witness
- Violating the law

The list above shows specific sources of pressure felt by employees in the construction industry...Importantly, these are not merely pressures to perform - which can arguably be good motivators for employee engagement and high quality. Rather, employees indicated that the above were pressures to compromise their company's standards or the law in order to do their job. In other words, it may well be that the highly-pressurized environment that is inherent to the construction industry may be so intense that it leads employees to consider compromising standards." (Ethics Resource Council, 2014, p. 14)

Please indicate if you perceive construction as having "unique pressures" leading some managers to make unethical decisions.

- ○ Yes
- ○ No
- ○ I don't know

In what geographic region of the United States do you perceive most ethical transgressions in construction take place? Please choose only one.

Ethical Decision-Making Instruction

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Ethics is too personal and subjective to be taught as part of CM education.	○	○	○	○	○

Ethical Decision-Making Instruction

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Ethical decision-making courses have a significant effect on students' professional development as construction managers.	○	○	○	○	○

Ethical Decision-Making Instruction

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I consider it my role to teach students on topics involving ethical decision making in construction.	○	○	○	○	○

Ethical Decision-Making Instruction

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Professional role models (colleagues, supervisors, etc.) have a significant effect on students' ethical decision-making development as construction managers.	○	○	○	○	○

Ethical Decision-Making Instruction

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
As a professional, I consider myself qualified to teach aspects of ethical decision making in construction.	○	○	○	○	○

Ethical Decision-Making Coursework

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The content of courses on ethical decision making in our CM program is adequate.	○	○	○	○	○

Ethical Decision-Making Coursework

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
At least one introductory ethical decision-making course should be mandatory for all students enrolled in our CM program.	○	○	○	○	○

Ethical Decision-Making Coursework

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Ethical decision making is an important aspect of a CM program at an institution.	○	○	○	○	○

Ethical Decision-Making Coursework

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Students are taught adequately about ethical decision making in classes outside of our CM program.	○	○	○	○	○

Case Study Instruction

For this survey: Case studies are stories used in courses to challenge students to learn principles and present solutions to authentic problems.
They may include homework.

An example would be if a supervisor asks a subordinate to do something they know to be against policy. The case study would identify the people involved and the issue to promote thought-provoking discussion and analysis.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Case studies are an effective instructional tool.	○	○	○	○	○

Case Study Instruction

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I use case studies as an instructional tool.	○	○	○	○	○

Case Study Instruction

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I use case studies to teach ethical decision making.	○	○	○	○	○

Case Study Instruction

	Strongly Disagree	Disagree	Neural	Agree	Strongly Agree
Case studies to teach ethical decision making are readily available.	○	○	○	○	○

Case Study Instruction

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Authentic case studies to teach ethical decision making are readily available.	○	○	○	○	○

Please read the following case study example:

Procurement credits

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Case study is easily understood by me.	○	○	○	○	○

Procurement Credits

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Case study would be easily understood by students.	○	○	○	○	○

Procurement Credits

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Case study could be improved upon.	○	○	○	○	○

Procurement Credits

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Case study is an effective instructional tool to present an ethical decision-making lesson in class.	○	○	○	○	○

Procurement Credits

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I would use case study as an instructional tool on ethical decision making to students.	○	○	○	○	○

Procurement Credits - Please specifically indicate where you would improve upon case study.

Please specifically indicate how you would use this case study.

What do you think of the case study?

Please indicate your specific process for reviewing case studies, if applicable.

Please indicate the institution where you teach. Please choose only one.

Please indicate the choice best describing your position.
Please choose only one.

- Dean
- Department Chair / Head
- Professor
- Associate Professor
- Assistant Professor
- Instructor
- Lecturer
- Faculty
- Visiting Instructor
- Adjunct Faculty / Part-Time Faculty
- Teaching Assistant
- Other

Please indicate your gender.

- Male
- Female
- Prefer not to respond

Please indicate the state where your primary institution is located.

Please indicate if you are open to being contacted to share/discuss ethical decision making in CM and/or using case studies.
The researcher welcomes the opportunity.

- ○ Yes
- ○ No

If so, please indicate the preferred method to contact you and when.

Method (Telephone or Email):	
Day of week and time:	
Telephone #:	
Email Address:	

Commercial Construction Ethical Decision Making; Instructor Perspectives

We thank you for your time spent taking this survey.
Your response has been recorded.

APPENDIX C3: INVITATION TO PARTICIPATE IN SURVEY LETTER

COLORADO STATE UNIVERSITY

John R. Weber <jrwtwo@rams.colostate.edu>

Invitation to Participate Ethical Decision Making Survey - Colorado State University
3 messages

John R. Weber <jrwtwo@rams.colostate.edu> Thu, Apr 29, 2021 at 6:02 PM
Reply-To: jrwtwo@rams.colostate.edu
To: John Weber <jrwtwo@rams.colostate.edu>
Bcc: erin.ameson@colostate.edu, david.arnold@colostate.edu, brett.brown@colostate.edu, jared.burgoon@colostate.edu, nicole.dufalla@colostate.edu, jon.elliott@colostate.edu, todd.fantz@colostate.edu, anna.fontana@colostate.edu, scott.glick@colostate.edu, paul.goodrum@colostate.edu, chris.harper@colostate.edu, j.killingsworth@colostate.edu, mike.oreilly@colostate.edu, svetlana.olbina@colostate.edu, chad.olivier@colostate.edu, "Ozbek,Mehmet" <mehmet.ozbek@colostate.edu>, nicholas.rubino@colostate.edu, bolivar.senior@colostate.edu, rodolfo.valdes@colostate.edu, jeff.wilkes@colostate.edu, john <john@constmgt.com>, mohammed.hashem.mehany@colostate.edu

Colorado State University

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School of Education
209 Education Building • 1588 Campus Delivery • Fort Collins, Colorado 80523-1588
Phone: (970) 491-6317 • Fax: (970) 491-1317 • www.soe.chhs.colostate.edu

Instructor
Construction Management Program
Colorado State University
College of Health and Human Sciences
Construction Management
Fort Collins, CO
80523

April 29, 2021

Attn: Instructor

Re: Information Letter/Invitation to Participate in Survey - Case Study Instruction on Ethical Decision Making in Construction Management Programs

Dear Colleague,

My name is John Weber. I am a researcher and doctoral candidate for a degree in Education and Human Resources. We are conducting a research study on case study instruction of ethical decision making in construction management programs. The title of our project is Commercial Construction Ethical Decision Making; Authentic Case Studies. The Principal Investigator is Dr. Carole Makela and I am the Co-Principal Investigator. Dr. Makela is my advisor.

I am writing to notify you of an upcoming invitation to participate. The subject line of the email will include *Ethical Decision Making; Instructor Perspectives*. We would like you to participate in this anonymous online survey. Participation will take approximately 30 minutes and is completely voluntary. If you decide to participate in this study, you may withdraw your consent and stop participation at any time.

We will not collect your name or personal identifiers. When we report and share the data to others, we combine the data from all participants. We hope to gain more knowledge on case study instruction of ethical decision making in commercial construction. There are no known risks in participating.

Please keep an eye out for this important survey. If you have any more questions about the research, please contact John Weber at the contact information listed below. If you have any questions about your rights as a volunteer in this research, contact the CSU IRB at: RICRO_IRB@mail.colostate.edu; 970-491-1553.
Thank you very much for your time.

Sincerely,

Dr. Carole Makela, PhD
Professor
Colorado State University

John R. Weber, LEED AP, MBA, PhD Candidate
jrwtwo@rams.colostate.edu
Colorado State University

APPENDIX C4: COVER LETTER

John Weber <noreply@surveys.colostate.edu> 5/4/2021 6:42 PM

Commercial Construction Ethical Decision Making; Instructor Perspectives West May 2021

To john@constmgt.com

Please read below and click link to complete survey. Thank you.

Follow this link to the Survey:
Take the Survey

Or copy and paste the URL below into your internet browser:
http://colostate.az1.qualtrics.com/jfe/form/SV_eIJQCYrsclMGfQ2?Q_DL=pYqlJ9UBFB8Qb0k_eIJQCYrsclMGfQ2_MLRP_3NPrigHP9kKgqlg&Q_CHL=email

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Phone: (970) 491-6317 • Fax: (970) 491-1317 • www.soe.chhs.colostate.edu

Instructor
Construction Management Program

May 4, 2021

Attn: Instructor

Re: Survey for Case Study Instruction on Ethical Decision Making in Construction Management Programs

Dear Colleague,

My name is John Weber. I am a researcher and doctoral candidate for a degree in Education and Human Resources. We are conducting a research study on case study instruction of ethical decision making in construction management programs. The title of our project is *Commercial Construction Ethical Decision Making: Authentic Case Studies*. The Principal Investigator is Dr. Carole Makela and I am the Co-Principal Investigator. Dr. Makela is my advisor.

We would like you to participate on this anonymous online survey. Participation will take approximately 30 minutes and is completely voluntary. If you decide to participate in this study, you may withdraw your consent and stop participation at any time. To indicate your consent to participate in this research and to continue on to the survey, please click on the survey link above.

We will not collect your name or personal identifiers. When we report and share the data to others, we combine the data from all participants. We hope to gain more knowledge on case study instruction of ethical decision making in commercial construction. There are no known risks in participating.

If you have any more questions about the research, please contact John Weber at the contact information listed below. If you have any questions about your rights as a volunteer in this research, contact the CSU IRB at: RICRO_IRB@mail.colostate.edu; 970-491-1553.

Thank you very much for your time.

Sincerely,

Dr. Carole Makela, PhD
Professor
Colorado State University

John R. Weber, LEED AP, MBA, PhD Candidate
jrwlwo@rams.colostate.edu
Colorado State University

Follow the link to opt out of future emails:
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APPENDIX C5: REMINDER TO PARTICIPATE LETTER

John Weber <noreply@surveys.colostate.edu> 5/11/2021 2:05 PM

Your Input is Needed Commercial Construction Ethical Decision Making; Instructor Perspectives West May 2021

To john@constmgt.com

Your input is needed. Please read below and click on link to complete survey. Thank you.

Follow this link to the Survey:
Take the Survey

Or copy and paste the URL below into your internet browser:
http://colostate.az1.qualtrics.com/jfe/form/SV_eIJQCYrsclMGfQ2?Q_DL=pYqIJ9UBFB8Qb0k_eIJQCYrsclMGfQ2_MLRP_3NPrigHP9kKgglg&Q_CHL=email

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---

Instructor

May 11, 2021

Attn: Instructor

Re: Survey for Case Study Instruction on Ethical Decision Making in Construction Management Programs
Reminder

Dear Colleague,

My name is John Weber. I am a researcher and doctoral candidate for a degree in Education and Human Resources. We are conducting a research study on case study instruction of ethical decision making in construction management programs. The title of our project is *Commercial Construction Ethical Decision Making; Authentic Case Studies*. The Principal Investigator is Dr. Carole Makela and I am the Co-Principal Investigator. Dr. Makela is my advisor.

We would like you to participate on this anonymous online survey. This is a reminder. Participation will take approximately 30 minutes and is completely voluntary. If you decide to participate in this study, you may withdraw your consent and stop participation at any time. To indicate your consent to participate in this research and to continue on to the survey, please click on link above.

We will not collect your name or personal identifiers. When we report and share the data to others, we combine the data from all participants. We hope to gain more knowledge on case study instruction of ethical decision making in commercial construction. There are no known risks in participating.

If you have any more questions about the research, please contact John Weber at the contact information listed below. If you have any questions about your rights as a volunteer in this research, contact the CSU IRB at: RICRO_IRB@mail.colostate.edu; 970-491-1553.

Thank you very much for your time.

Sincerely,

Dr. Carole Makela, PhD
Professor
Colorado State University

John R. Weber, LEED AP, MBA, PhD Candidate
jrwtwo@rams.colostate.edu
Colorado State University

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APPENDIX C6: SECOND REMINDER TO PARTICIPATE LETTER

John Weber <noreply@surveys.colostate.edu> 5/18/2021 12:10 PM

Your Input is Needed Commercial Construction Ethical Decision Making; Instructor Perspectives West May 2021

To john@constmgt.com

Your input is needed.
Please read below and click on link to complete survey.
As of today, 27 individuals have started survey but did not complete.
Please complete survey if you have started or if starting today.
Survey takes only 30 minutes of your time.
Thank you.

Follow this link to the Survey:
Take the Survey

Or copy and paste the URL below into your internet browser:
http://colostate.az1.qualtrics.com/jfe/form/SV_eIJQCYrsclMGfQ2?Q_DL=pYqlJ9UBFB8Qb0k_eIJQCYrsclMGfQ2_MLRP_3NPrigHP9kKgglg&Q_CHL=email

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Phone: (970) 491-6317 • Fax: (970) 491-1317 • www.soe.chhs.colostate.edu

Instructor

May 18, 2021

Attn: Instructor

Re: Survey for Case Study Instruction on Ethical Decision Making in Construction Management Programs
Reminder

Dear Colleague,

My name is John Weber. I am a researcher and doctoral candidate for a degree in Education and Human Resources. We are conducting a research study on case study instruction of ethical decision making in construction management programs. The title of our project is *Commercial Construction Ethical Decision Making; Authentic Case Studies*. The Principal Investigator is Dr. Carole Makela and I am the Co-Principal Investigator. Dr. Makela is my advisor.

We would like you to participate on this anonymous online survey. This is a reminder. Participation will take approximately 30 minutes and is completely voluntary. If you decide to participate in this study, you may withdraw your consent and stop participation at any time. To indicate your consent to participate in this research and to continue on to the survey, please click on link above.

We will not collect your name or personal identifiers. When we report and share the data to others, we combine the data from all participants. We hope to gain more knowledge on case study instruction of ethical decision making in commercial construction. There are no known risks in participating.

If you have any more questions about the research, please contact John Weber at the contact information listed below. If you have any questions about your rights as a volunteer in this research, contact the CSU IRB at: RICRO_IRB@mail.colostate.edu; 970-491-1553.

Thank you very much for your time.

Sincerely,

Dr. Carole Makela, PhD
Professor
Colorado State University

John R. Weber, LEED AP, MBA, PhD Candidate
jrwtwo@rams.colostate.edu
Colorado State University

Follow the link to opt out of future emails:
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APPENDIX C7: THIRD REMINDER TO PARTICIPATE LETTER

John Weber <noreply@surveys.colostate.edu> 6/1/2021 3:58 PM

Your Input is Needed Commercial Construction Ethical Decision Making; Instructor Perspectives West May 2021

To john@constmgt.com

Your input is needed.
Please read below and click on link to complete survey.
As of today, 30 individuals have started survey but did not complete.
Please complete survey if you have started or if starting today.
Survey takes about 30 minutes of your time.
Thank you.

Follow this link to the Survey:
Take the Survey

Or copy and paste the URL below into your internet browser:
http://colostate.az1.qualtrics.com/jfe/form/SV_eIJQCYrsclMGfQ2?Q_DL=pYqIJ9UBFB8Qb0k_eIJQCYrsclMGfQ2_MLRP_3NPrigHP9kKgglg&Q_CHL=email

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---

Instructor

June 1, 2021

Attn: Instructor

Re: Survey for Case Study Instruction on Ethical Decision Making in Construction Management Programs
Reminder

Dear Colleague,

My name is John Weber. I am a researcher and doctoral candidate for a degree in Education and Human Resources. We are conducting a research study on case study instruction of ethical decision making in construction management programs. The title of our project is *Commercial Construction Ethical Decision Making; Authentic Case Studies*. The Principal Investigator is Dr. Carole Makela and I am the Co-Principal Investigator. Dr. Makela is my advisor.

We would like you to participate on this anonymous online survey. This is a reminder. Participation will take approximately 30 minutes and is completely voluntary. If you decide to participate in this study, you may withdraw your consent and stop participation at any time. To indicate your consent to participate in this research and to continue on to the survey, please click on link above.

We will not collect your name or personal identifiers. When we report and share the data to others, we combine the data from all participants. We hope to gain more knowledge on case study instruction of ethical decision making in commercial construction. There are no known risks in participating.

If you have any more questions about the research, please contact John Weber at the contact information listed below. If you have any questions about your rights as a volunteer in this research, contact the CSU IRB at: RICRO_IRB@mail.colostate.edu; 970-491-1553.

Thank you very much for your time.

Sincerely,

Dr. Carole Makela, PhD
Professor
Colorado State University

John R. Weber, LEED AP, MBA, PhD Candidate
jrwtwo@rams.colostate.edu
Colorado State University

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APPENDIX C8: THANK YOU FOR PARTICIPATING LETTER

Survey Response Thank You <noreply@surveys.colostate.edu> 5/4/2021 4:29 PM

Thank You

To john@constmgt.com

Colorado State University

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---

Instructor

Spring 2021

Attn: Instructor

Re: Thank You for Participating in Survey on Ethical Decision Making in Construction Management Programs

Dear Colleague,

Hello. Hope that you are having a great day today. I would like to take a moment of your time to say Thank You for participating in the ethical decision making survey. Your input is valuable to this inquiry.

Thank you very much for your time.

Sincerely,

Dr. Carole Makela, PhD
Professor
Colorado State University

John R. Weber, LEED AP, MBA, PhD Candidate
jrwtwo@rams.colostate.edu
Colorado State University

APPENDIX C9: THANK YOU TO EACH INSTITUTION LETTER

COLORADO STATE UNIVERSITY

John R. Weber <jrwtwo@rams.colostate.edu>

Thank You - Colorado State University

John R. Weber <jrwtwo@rams.colostate.edu> Wed, Jun 9, 2021 at 2:33 PM
Reply-To: jrwtwo@rams.colostate.edu
To: John Weber <jrwtwo@rams.colostate.edu>
Bcc: erin.ameson@colostate.edu, david.arnold@colostate.edu, brett.brown@colostate.edu, jarec.burgoon@colostate.edu, nicole.dufalla@colostate.edu, jon.elliott@colostate.edu, todd.fantz@colostate.edu, anna.fontana@colostate.edu, scott.glick@colostate.edu, paul.goodrum@colostate.edu, chris.harper@colostate.edu, j.killingsworth@colostate.edu, mike.oreilly@colostate.edu, svetlana.olbina@colostate.edu, chad.olivier@colostate.edu, "Ozbek,Mehmet" <mehmet.ozbek@colostate.edu>, nicholas.rubino@colostate.edu, bolivar.senior@cclostate.edu, rodolfo.valdes@cclostate.edu, jeff.wikes@colostate.edu, john <john@constmgt.com>, mohammed.hashem.mehany@colostate.edu

Thank you for your time if you have completed the Instructor Perspectives survey.
The survey will be open until June 15, 2021 if you would like to complete it.

Colorado State University

College of Health and Human Sciences
School of Education
209 Education Building • 1588 Campus Delivery • Fort Collins, Colorado 80523-1588
Phone: (970) 491-6317 • Fax: (970) 491-1317 • www.soe.chhs.colostate.edu

Instructor
Construction Management Program
Colorado State University
College of Health and Human Sciences
Construction Management
Fort Collins, CO
80523

June 9, 2021

Attn: Instructor

Re: Thank You Note for Survey on Ethical Decision Making in Construction Management Programs

Dear Colleague,

Hello. Hope that you are having a great day today. I would like to take a moment of your time to say Thank You for your time if you participated in the ethical decision making survey. Your input is valuable to this inquiry.

Thank you very much for your time.

Sincerely,

Dr. Carole Makela, PhD
Professor
Colorado State University

John R. Weber, LEED AP, MBA, PhD Candidate
jrwtwo@rams.colostate.edu
Colorado State University

APPENDIX C10: DATA COLLECTION TIMETABLE PLAN AND ACTUAL

Plan

Data Collection Timetable Plan					
Commercial Construction Ethical Decision Making: Authentic Case Stu					
John R. Weber		Project Start Date:		14-Apr-21	
		Scrolling Increment		0	
Milestone Desc	Categ	Assigned	Progre	Start	No.
Pilot	Goal	JRW	0%	14-Apr-21	12
Information Letter	Goal	JRW	0%	26-Apr-21	1
Invitation to Participate	Goal	JRW	0%	29-Apr-21	1
Reminder Notification	Goal	JRW	0%	6-May-21	1
Survey Time Period	Goal	JRW	0%	29-Apr-21	33
Data Analysis	Goal	JRW	0%	1-Jun-21	120

Actual

Data Collection Timetable Actual					
Commercial Construction Ethical Decision Making: Authentic Case Studies					
John R. Weber		Project Start Date:		14-Apr-21	
		Scrolling Increment		10	
Milestone Description	Category	Assigned To	Progress	Start	No. Days
Pilot	Milestone	JRW	100%	14-Apr-21	15
Information Letter / Invitation to	Milestone	JRW	100%	29-Apr-21	1
Survey Link Distributed	Milestone	JRW	100%	4-May-21	1
Reminder Notification Forwarded	Milestone	JRW	100%	11-May-21	1
Second Reminder Notification Forwarded	Milestone	JRW	100%	18-May-21	1
Third Reminder Notification Forwarded	Milestone	JRW	100%	1-Jun-21	1
Thank You Letter Forwarded	Milestone	JRW	100%	9-Jun-21	1
Survey Time Period	Milestone	JRW	100%	4-May-21	43
Data Analysis	Milestone	JRW	100%	1-Jun-21	120

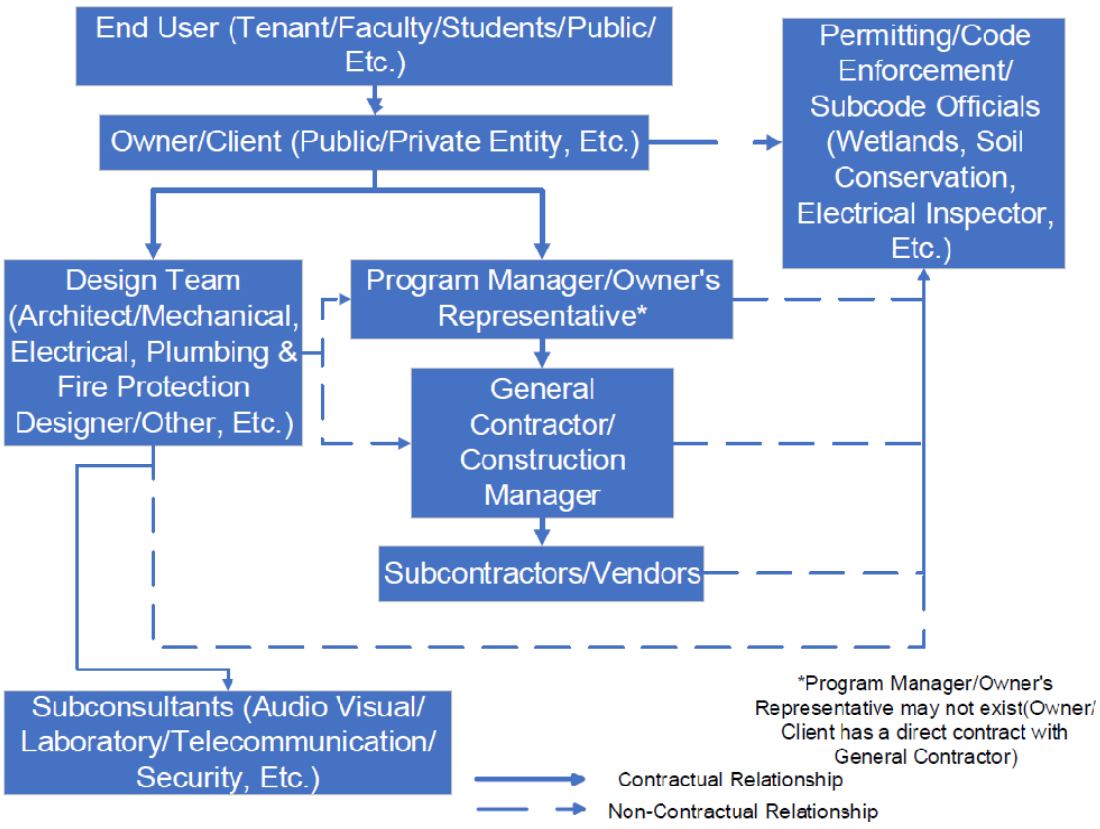
APPENDIX D: TEACHING AIDS PACKET

APPENDIX D1: SUMMARY OF TEACHING AIDS PACKET PROVIDED BY AUTHOR

#	Teaching Aids	Descriptions
1	Stakeholder Organization Chart. Appendix D1	This organization chart includes contractual and non-contractual relationships among project stakeholders and team. Including end user, owner/client, program manager, design team, general contractor, construction manager, subcontractors, and permitting/code enforcement officials.
2	Case Analysis Decision Model. Appendix D2	This decision tree includes a process of decision making that may be considered when analyzing cases and making decisions on a project.
3	Flowchart from Project Inception to Completion. Appendix D3	This flowchart includes project process from inception to completion. The chart details general milestones, aspects of confidential information, and who has access to it.
4	Flowchart from Project Kickoff to Completion. Appendix D4	This flowchart includes process of a project from kickoff to turnover to owner. Specific milestones and key decision areas are identified. The detail of this chart presents a view of many decisions made by construction managers during a project.
5	Flowchart of Change Order Process. Appendix D5	This flowchart includes process of change order management. Change order processing is an area of very subjective decision making on a project.
6	Forces on a Construction Managers' Decision Making. Appendix D6	This diagram details different forces managers face when making decisions. A sphere of context, courage, fidelity, and integrity shape decision making. Attachments, personal relationships, contractual obligations, laws and societal/industry norms are all forces impacting the process.

APPENDIX D2

STAKEHOLDER ORGANIZATION CHART

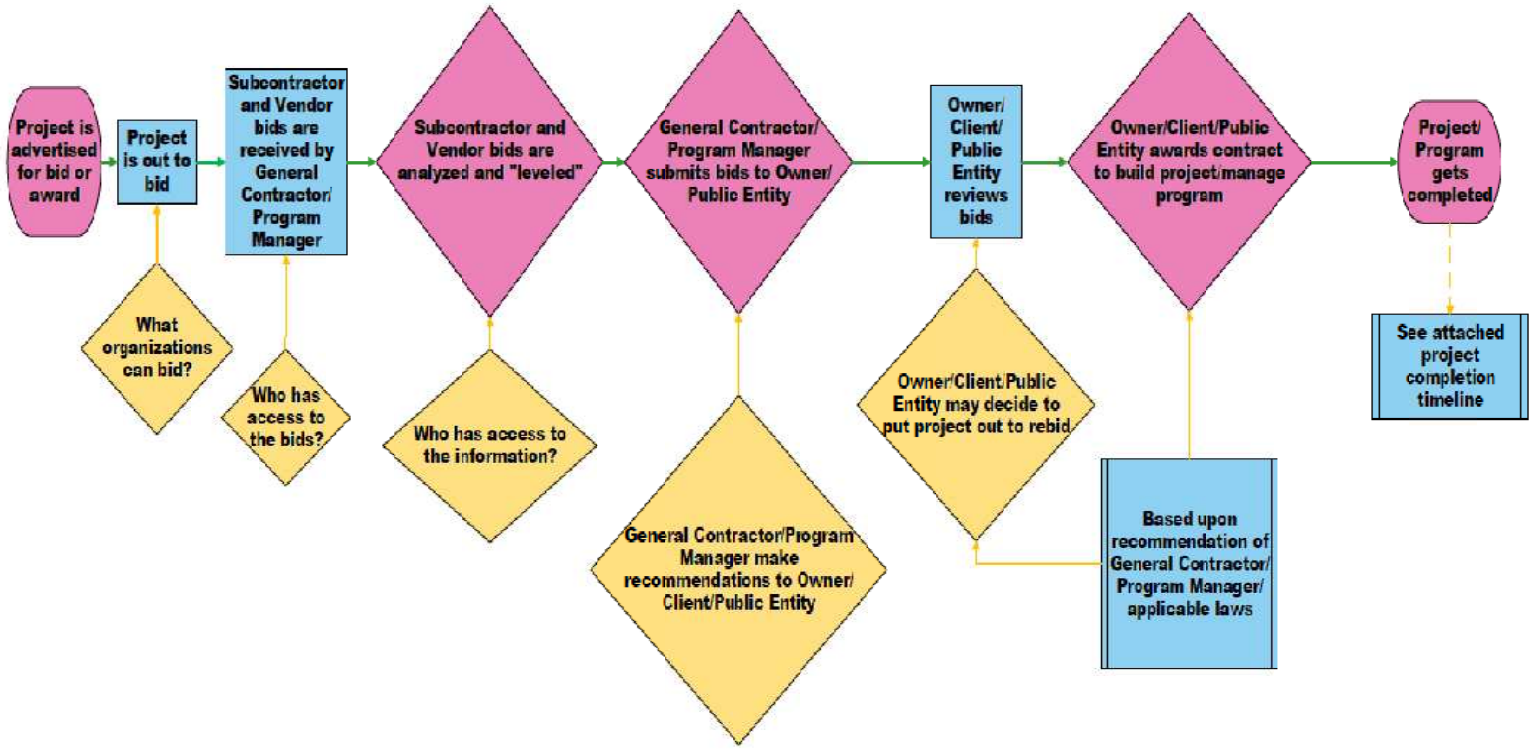


APPENDIX D3

CASE ANALYSIS DECISION MODEL

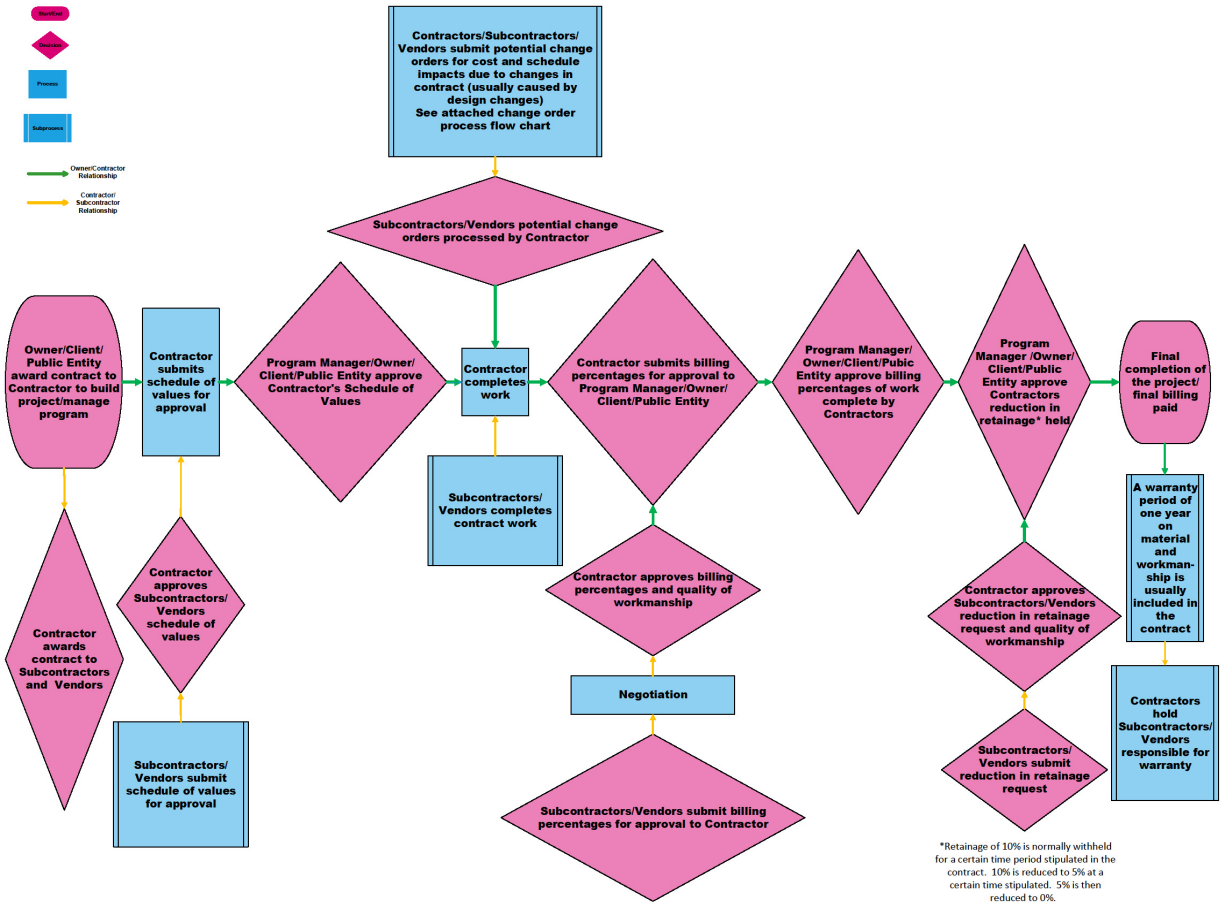
APPENDIX D4

FLOWCHART OF PROJECT INCEPTION TO COMPLETION



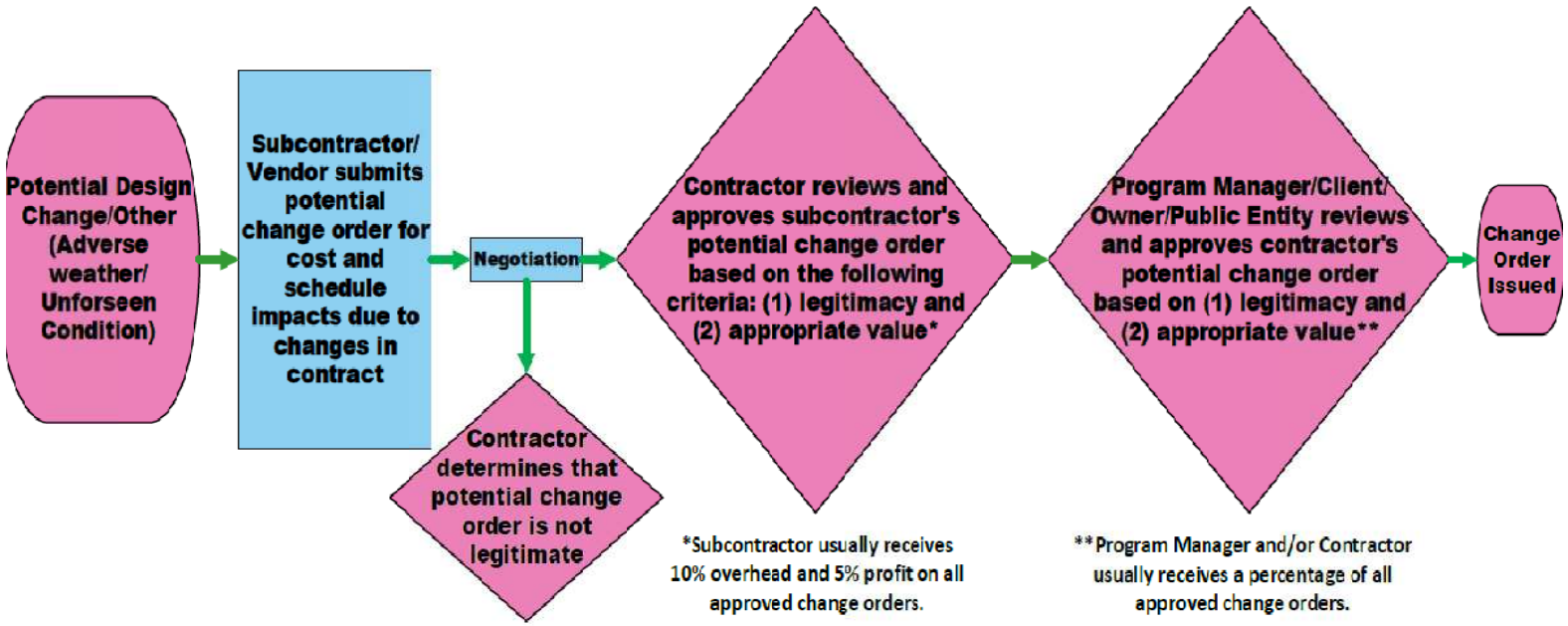
APPENDIX D5

FLOWCHART FROM PROJECT KICKOFF TO COMPLETION



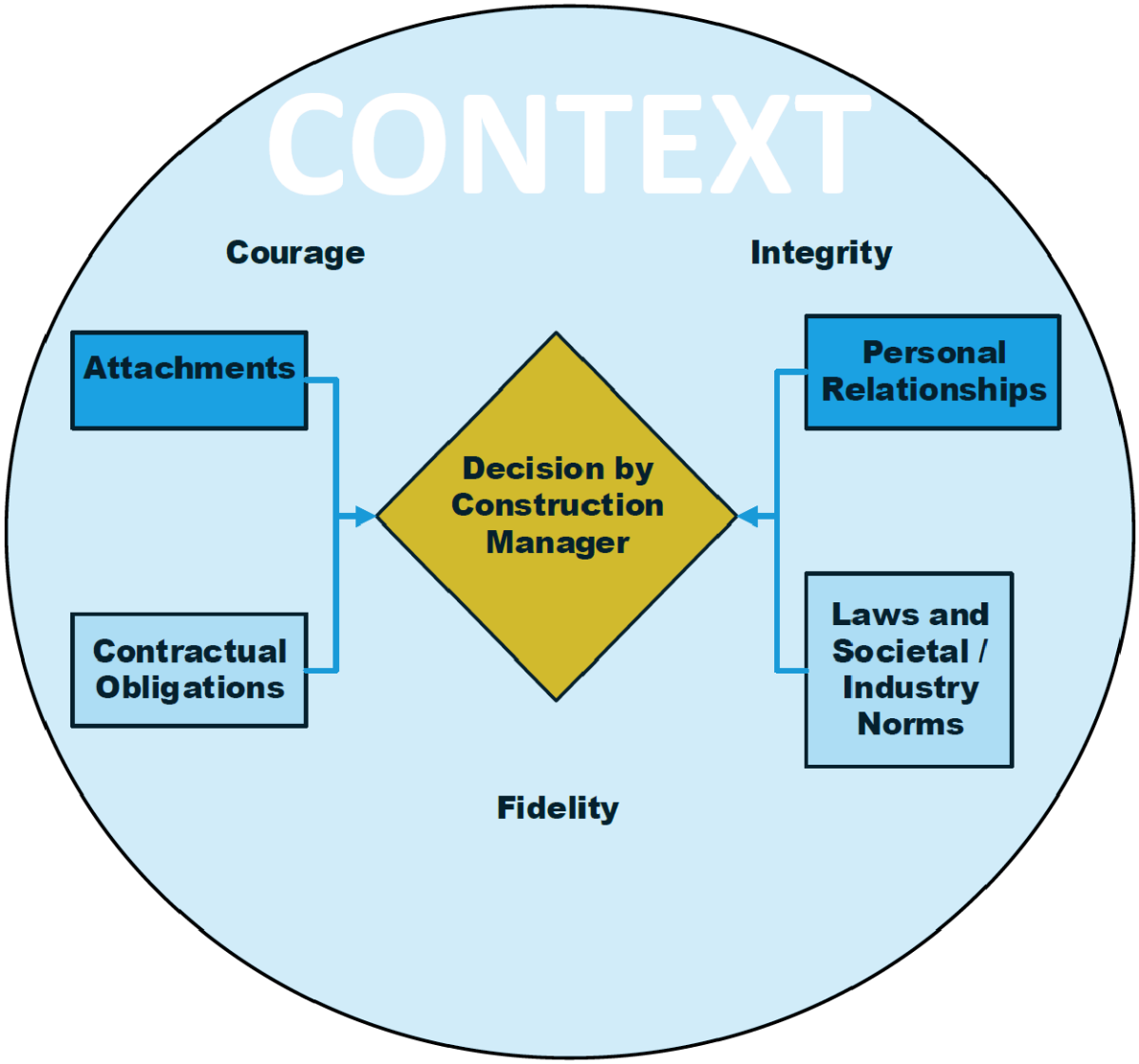
APPENDIX D6

FLOWCHART OF POTENTIAL CHANGE ORDER PROCESS



APPENDIX D7

FORCES ON A CONSTRUCTION MANAGERS' DECISION MAKING



APPENDIX E: CASE STUDY PACKET

APPENDIX E1: CASE STUDY DESCRIPTIONS AND DILEMMAS

Case Study Descriptions and Dilemmas

Case Study Topics				
Categories	Titles	Descriptions	Positions	Dilemmas
Penalties, Cooperation	Bad Decision	Subcontractors face many challenges to win work. Sometimes they are asked to do things that are unethical and/or illegal.	Subcontracting Firm Owner	What certain subcontractors do for general contracting firms to win work may not always be something they are proud of. At what point did the subcontractor say no?
Federal Funds/ Taxpayer/ Political Contributions	TAP Change Order Request	A senior project manager was directed by company supervisors to include $100,000s of illegitimate costs in a change order request to the federal government.	Senior Project Manager at General Contracting Firm	The senior project manager knows including the costs are wrong and resists including on a change order request against the direction of multiple supervisors. If the project manager decides to follow supervisor direction and submit the change order request, how did they protect themselves?
Federal Funds/ Taxpayer/Political Contributions	Pay to Play	A procurement department regularly requested contributions from subcontractors to support politicians.	Procurement Agent	General contractors purchasing departments deal with hundreds of millions of dollars. Sometimes the responsibilities include contributions with the goal of acquiring new work in the future. Though not necessarily illegal in some states, contributions to politicians may improve chances of getting more work. Where did the money come from? If it feels wrong, but is legal, how did they proceed?
Federal Funds/ Taxpayer/Political Contributions	Check the Box	An owners' representative for a federal government project is directed to approve monthly billings he knows to be incorrect and not per the federal acquisition regulation (FAR).	Program Manager/ Owners' Representative	If a federal contracting officer directed federal contractors to approve billings they knew to be false, what did the contractor to do?
Ethics Programs/ Compliance Officer/ Code of Ethics/ Code of Conduct/ Whistleblower	Government Laboratory	A construction manager with a general contractor noticed change order requests to be inflated, and reported this to upper management.	Construction Manager	Did a general contractor have a responsibility to submit accurate change order requests from subcontractors? If reported to upper management, should something have been done to correct the issue?

Ethics Programs/ Compliance Officer/Code of Ethics/Code of Conduct/ Whistleblower	Inaccurate Time & Material Tickets	If a member of the program management team identified wrongdoing by another member of the team, what did the supervisor do to resolve the dilemma?	Owners' Representative	After being directed by supervisor to "look the other way", and process inaccurate time and material tickets, the decision maker felt uncomfortable in following the direction. In order to keep their job, and continue to work with the team, how did they proceed?
Ethics Programs/ Compliance Officer/Code of Ethics/Code of Conduct/ Whistleblower	Tickets to the Game	A procurement agent awarded large dollar contracts to subcontractors; deals may be made to minimize losses of other projects. Sometimes gifts were exchanged during those contract awards.	Procurement Agent	When is it permissible to have combined subcontract awards to cover losses on projects? Since upper management was on board, and expects this, what choices did the procurement agent have? What steps could upper management have taken to monitor the procurement department more stringently? What value of gift should have made it permissible for procurement agents to accept?
Ethics Programs/ Compliance Officer/Code of Ethics/Code of Conduct/ Whistleblower	Personal Relationships	Personal relationships had a nonrational impact on individuals making decisions. Certain managers may have provided information, and deals to those they were acquainted with.	Senior Project Manager	A manager was faced with working with a team that have known one another for years. The management of the project was impacted as a result. Faced with the owners' representative providing bid numbers to subcontractors, what did the senior project manager do, if anything?
Industry Perception "Everybody does it"	Overbilling Direction by Client	A senior project manager was faced with being directed to increase billing percentages by the client on a federal government project.	Senior Project Manager	The senior project manager was aware increasing percentages of billing each month is not per the federal acquisition regulation (FAR). What did the senior project manager do to protect themselves, if anything, since the team was aware of the issue?
Industry Perception "Everybody does it"	Snorkel HVAC Exhaust Potential Change Order (PCO)	Credits for work deleted were much less in value than the same work added. The method may be commonly used by contractors on projects where unknowing owners did not review credits as stringently as extras, but should have.	Owners' Representative	What responsibilities did the general contractor and subcontractors have to charge the same value for credits as adders? Why would the price have been different? What responsibilities did university officials have once they were made aware of the cost difference, did they have a responsibility to retroactively correct the issue?
Leadership	Organization Charter	An owners' representative is tasked with processing hundreds of change order requests. In her review, she discovered overcharges made on prior processed change orders.	Owners' Representative	The owners' representative discovers numerous billing irregularities and inflated change orders already processed. What responsibilities did university representatives have to correct the prior issues at a private university?
Leadership	Labor Rates	An owners' representative was processing hundreds of change order requests for a private university and noticed labor rates included were inflated by double digit percentages.	Owners' Representative	Labor rates were negotiated and agreed upon through a project labor agreement. The owners' representative discovered inflated labor rates used consistently for all trades for years at this private university. What responsibilities did university officials have to retroactively correct the issue?

Leadership	Screamer	Harassment existed in many forms; sometimes through yelling, screaming, fear, and intimidation. What happens if harassment was from a different company representing the client?	Senior Construction Manager	If fear and intimidation by an owners' representative overseeing a design-build organization are permitted to occur for years, what responsibilities did management or human resources (of either organization) have to do anything about it?
Disadvantaged Business Enterprise (DBE)/ Minority Business Enterprise (MBE)/ Women-Owned Business Enterprise (WBE)/ Small Business Enterprise (SBE)	Women Flaggers	A site observer studied a new college stadium construction site for a semester noticing only females were watching the gates.	Site Observer	Experienced in the construction industry for decades, the site observer noticed female participation on some construction sites may be limited. How did the industry increase female worker participation? What responsibilities did the worker have, the subcontractor, the contractor, and the client to address the issue?
Multi-year Crime and Shell Companies	Buyout Credits	A procurement department of a general contracting firm used methods involving additional funds of cash rich projects to cover costs of other projects that may have stood to lose money.	Procurement Agent	Construction companies managed great sums of money that may be used in different ways to protect interests of the organization. Procurement agents followed direction of the manager to shift money from project to project. If in the same position, what should the procurement agent do differently, if anything at all?
Multi-year Crime and Shell Companies	Combo Buy	Procurement departments of general contracting firm managed multiple hundreds of millions of dollars. Sometimes organizations may have combined awards to minimize losses. Did these organizations lose money on projects?	Procurement Agent	Procurement agents followed direction of their manager, otherwise they would not be in the department for very long. Contracts may have been combined to offset losses of one project for another. If everyone in the office was aware of the issue occurring, what different steps should the procurement agent have taken, if any?
Safety	Water Supply Piping	A procurement agent at a general contracting firm and management was aware of severe corrosion in domestic water piping recently installed in a high-rise residential complex.	Procurement Agent	If public safety was at risk, what added responsibilities did the general contractor have to notify tenants? When the general contractor indicated the approved submittal does not count if contrary to contract requirements, provide reasons why this statement is accurate, or not.
Safety	Near Miss	Personal relationships impacted decisions made on projects and how they were managed. Different conflicts of interest resulted when individuals making safety decisions, and other business dealings with subcontractors.	Senior Project Manager	The decision maker found out the safety officer who needs to address issues on the project had a conflict of interest that may affect their judgment. What did individuals do knowing what "ought" to be done was not being done?

Safety	Covid-19 Site Visit	Safety was stated to be paramount for a construction organization. When faced with employing vaccinated and unvaccinated workers, how did this organization navigate this uncharted terrain?	Construction Manager	An unvaccinated employee was inside a small room with three other individuals. What should the requirements have been to notify workers (right to know), if one of them was unvaccinated? What were the rights of privacy of employees when others may have been put at risk?
Undocumented Worker/ International	International Culture	A procurement agent was tasked with managing a bidding "tender" process in a foreign land. Facing pressure to maintain the status quo, the individual navigated through management preferences, personal relationships, and international customs.	Procurement Agent	International construction was different than that of the United States. If an organization based in the U.S. wanted to enforce U.S. procurement rules overseas, explain the reasons why it made sense to do so, or not?

APPENDIX E2: CASE STUDIES

A. Bad Decision – Subcontractor and bribery.

B. TAP Change Order Request – General contractor and changes.

C. Pay to Play – General contractor and political contributions.

D. Check the Box – Owners' representative and billing.

E. Government Laboratory – General contractor and changes.

F. Inaccurate Time & Material Tickets – Owners' representative and changes.

G. Tickets to the Game – General contractor and gifts.

H. Personal Relationships – General contractor and collusion.

I. Snorkel HVAC Exhaust – Owners' representative and changes.

J. Overbilling Direction by Client – General contractor and billing.

K. Organization Charter – Owners' representative and financial management.

L. Labor Rates – Owners' representative and changes.

M. Screamer – Design build contractor and harassment.

N. Women Flaggers – General contractor and equal opportunity for women.

O. Buyout Credits – General contractor and procurement.

P. Combo Buy – General contractor and procurement.

Q. Water Supply Piping – General contractor and safety of public.

R. Near Miss – General contractor and safety.

S. Covid-19 Site Visit – Design build contractor and safety.

T. International Culture – General contractor and procurement.

Bad Decision

Subjects:

Bid Rigging, Bribery, Cooperation, Construction, Decision Making, Ethics, Fraud, Procurement, Reputation, Subcontractor.

Decision Makers:

Project Manager, Owner of subcontracting firm.

Background:

Sangria was a concrete subcontractor that performed work for large construction companies in the area. The Sloth Student Union project was new construction in the center of a prestigious university campus. Sangria had performed a great deal of work for Lukas, an international construction company who has over 33,500 employees globally. Projects on this university were coveted as money flows and there is much to be made. Lukas' organization was structured to allow the project manager to manage and award bids to subcontractors as opposed to having centralized purchasing in a regional office.

Case:

F. Drews was the project manager for Lukas. He met with the owner of Sangria and informed him that if he wanted the concrete contract on campus to send a $45,000 check for a car dealership in a neighboring state for F. Drews to go pick up his new Lexus. The president of Sangria agreed. He also demanded direct payment of $28,500 to win the contract; and was obliged. The owner of a roofing company paid F. Drews $20,000, and owner of an audio visual company paid him $10,000 to win the contracts. In total, about ten subcontractors paid bribes of $100,000s to F. Drews directly.

Prior to the scandal breaking, Lukas was removed from the Sloth Student Union project for undisclosed reasons as the university is private and prefers information kept closely held. It may be the case that Lukas wasn't being forthright with information regarding cost and schedule delays specifically attributed to custom steel members.

P. Maurice was hired as an owners' representative to manage the transfer of subcontracts from Lukas to a new construction manager. P. Maurice has prior purchasing experience and knew many of the subcontractors.

As part of his responsibilities, he meets with the president of Sangria who he has known for about a decade. The president is an older gentleman who noted to P. Maurice he needs to get contract retainage released soon and noted a sense of urgency. P. Maurice recognized this and wondered why; he did not appear well. He would later learn Sangria's president was set to go to prison for bribery, and his goal was to keep his wife out of prison. His wife had done the accounting for Sangria and was also charged in the scheme promulgated by Lukas' project manager.

The contents of this case study have been included for educational purposes. Any contents including names, values, etc. that are similar to real names, values, etc. are purely coincidental.

Newspaper accounts prior to the scandal quoted university officials "With Lukas, we get the A-Team, University has a very high regard for Lukas' ability to construct their most complex and demanding projects on time and within budget". The Student Union was then scheduled to open two years behind schedule and Lukas was banned from any future work at the university.

Instructor Information:

The Sloth Student Union project involved practices that may be utilized by large contractors but perhaps not so blatantly as indicated here. This case involves personal gain of the Lukas project manager.

Discussion Items/Questions for Students:

1. Read the case to understand the issues and challenges.
2. Identify issues involving ethics in the decisions made.
3. Explain if you feel Lukas' procurement procedures are appropriate, or if centralized is a better alternative, and why?
4. Explain if you feel the president of Sangria has more guilt than F. Drews? Why or why not?
5. What could the president of Sangria done differently? How would this impact his company? How would this impact future work with Lukas?
6. Research the issues presented in this case. Identify related issues in other situations from the press, government releases, and other research. What guides can be obtained from laws, policies, codes of conduct of similar companies, professional codes of ethics, etc.?
7. What are the implications of the issues in this case for Lukas, for the university?
8. Explain if you think banning Lukas from all future university work is appropriate.
9. What ethical framework guided your analysis? Why?

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TAP Change Order Request

Subjects:

Claims Games, Construction, Decision Making, Ethics, General Contractor, Public.

Decision Makers:

Senior Project Manager, Project Executive, Business Development Manager.

Background:

This project was at an existing U.S. federal government facility. The temperature adjustment process (TAP) individual infrastructure project valued at $750,000 was one of three firm fixed price contracts. With a schedule of 114 days, TAP was most critical as it feeds heated water to the entire mechanical system of $1BB program. E.X. Geary was the mechanical and plumbing subcontractor under Heidi Construction and has been in business for over 100 years. J. McGlocklin was a senior project manager (PM) with Heidi who signed a "short term assignment" letter lasting from late April through March to manage three projects valued at $22MM. Heidi was a large construction company in business for over 150 years. J. McGlocklin received monthly subsistence payment for the 11 month assignment.

Team:

A. Begosh was business development manager, 19 years with Heidi, 20+ years experience.
E. Damone was project executive, 13+ years with Heidi, 20+ years experience.
J. McGlocklin was senior project manager, Less than 1 year with Heidi, 20+ years experience.
J. Jaxon was superintendent, 14 years with Heidi, 15+ years experience.

Case:

In July, major design changes included in potential change order (PCO 01) increased the scope by 50%. E.X. Geary submitted PCO 01 pricing valued at $146,000. J. McGlocklin reviewed the change order request (COR) and determined costs at the high end, but acceptable.

E. Damone had a discussion with J. McGlocklin and tells him Heidi is going to include general conditions (GC) markups with this COR to recoup some of his living and reimbursable expenses; four months worth. The overall COR amounted to in excess of $500,000. J. McGlocklin reviewed the values and pushed back to E. Damone noting he (J. McGlocklin) had always been planned to be there 11 months anyway. E. Damone replied Heidi did not anticipate the staffing needs for all three projects and we need to recoup costs. J. McGlocklin pushed back further, "If I am at the conference table and someone asks me if I was originally planning on being here 11 months, I will respond yes". J. Jaxon was Heidi's superintendent and overheard the conversation in the trailer.

Later in the week, J. McGlocklin received a call from Heidi's' business development manager, A. Begosh. He had never received a call from him previously, but has met him. A. Begosh noted we need to hold the client responsible for design changes. He says "As long as you are with us, you need to" understand that our general and administrative (G&A) cost of 4% or 5%, and a fee of 8% or 9% is not profitable on COs, and does not include his time. He continued we need to include reimbursable expenses for two project engineers, and the

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performance of how we do falls on you; "we need to maximize margins". J. McGlocklin replies it will be difficult to justify multiple $100,000s of GCs for $150,000 of direct work.

A. Begosh said we will submit to the client and when the project is audited two years from now, it won't matter, nobody will remember if you were going to be here for 11 months or not. J. McGlocklin says the client is not going to be happy. A. Begosh again remarked, "as long as you are with us, you need to understand how this works", "we are providing the best value to the client". A. Begosh then stated it "doesn't matter what their opinion is" before ending the conversation.

Instructor Information:

The COR was submitted. The client is a stickler for costs and questioned every single aspect stating they cannot believe Heidi is requesting markups exceeding subcontractor cost.

In August, COR for PCO 01 in the amount of $375,000 was submitted.

Including (rounded to nearest $1,000s)"

- $178,000 of mechanical subcontractor costs
- $32,000 of projected overtime, added to a subcontractor value
- $168,000 for Dolan labor and other direct costs
- 160 hours for PX at $30,000
- 360 hours for SPM at $56,000
- 10 hours for procurement at $1,300
- 10 hours for scheduling at $1,400
- 8 hours for billing clerk at $400
- 80 hours of QC at $12,000
- 80 hours of safety at $7,800
- 160 hours of field engineering at $14,100
- Travel subsistence per diem & lodging for 18 weeks at $16,700
- Rental vehicles for 6 weeks at $1,800

In September, after two revisions, the CO for TAP PCO 01 was processed for $184,700. Including no projected overtime, but extended the project two months and:

- 24 hours for PX, and 24 hours for SPM
- 8 hours for procurement, and 8 hours for billing clerk
- 16 hours for field engineer
- 0 hours for scheduling, QC, and safety
- No additional funds for subsistence, per diem & lodging, vehicles

Discussion Items/Questions for Students:

1. What is the percentage of general conditions for PCO 01 requested versus CO 01?
2. What are the implications for the individuals, project, and company?
3. What implications do the contents of this case have for future relationships and work Heidi is considered for at this government facility? Does it matter?
4. What implications do specifics of this case have on J. McGlocklin's career? What do you think A. Begosh meant by stating "as long as you are with us", not once, but twice. What would you do?

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Pay to Play

Subjects:
Construction, Decision Making, Ethics, Fraud, General Contractor, Political Contributions, Procurement.

Decision Makers:
Purchasing Agent, Purchasing Manager, General Manager.

Background:

Burnside Construction had over 10,000 employees and centralized procurement; a method of awarding subcontracts in the regional office. S. Simeon was a procurement agent who reported to M. Jeff. About $500 million in subcontracts are awarded annually out of this regional office. Burnside took pride on reputation with over 100 years in business.

Team:
D. O'Connor was general manager (GM); 20+ years with Burnside.
P. Denunzio was executive assistant to GM; 15+ years with Burnside.
M. Jeff was procurement manager; 10+ years with Burnside, 11 years experience.
D. Maverick was procurement agent; 5+ years with Burnside, 10 years experience.
S. Simeon was procurement agent; 2+ years with Burnside, 4 years experience.
V. King was procurement principal; 38+ years experience with Curtis Painting.

Case:

After reviewing buyout schedule, the following was discussed in the Monday meeting.
M. Jeff: "I also need those political contributions we talked about from both of you. Let me know when all of those checks are coming in. D. O'Connor asked me about them this morning".
S. Simeon: "I'm getting mine, I am almost to my goal".
D. Maverick: "Me too".
M. Jeff: "There should be enough money in both of your projects to cover the costs".
The next day M. Jeff is in S. Simeon's office.
M. Jeff: "Oh yeah, I almost forgot, D. O'Connor is attending that politicians' event Friday night, he needs $20,000; all individual checks not valued over $2,300 each, like last time".
S. Simeon: "OK, I'll get them".
Later in the week, the following conversation occurred.
S. Simeon: "M. Jeff, I got the checks coming in. I hid the money in the concrete buy for Big Bank".
M. Jeff: "Don't say hide, you "buried" it".
S. Simeon: "You got it, Sorry".
M. Jeff: "Good job".

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Later Thursday afternoon another meeting occurred, V. King from Curtis Painting came into Burnside offices. He handed S. Simeon an envelope with 3 personal checks in it, each under $2,300 in value made out to a politician as a campaign contribution. S. Simeon received the envelope and put it in his desk drawer.
S. Simeon: "Thank you V. King".
Later that day.
P. Denunzio: "Good morning S. Simeon, M. Jeff told me last night that you would have the checks".
S. Simeon: "Yes, here they are".
P. Denunzio: "Thank you, D. O'Connor's got to leave at noon today, so he needs them for tonight. It is black tie and he's got a meeting at 3PM".
S. Simeon: "Thank you P. Denunzio, have a good weekend".
P. Denunzio: "You too S. Simeon".

Instructor Information:

Pattern matching and common themes should be identified in literature and government reports. A topic that could be identified is systemic ethical transgressions by a few rogue employees skirting company policy against the code of conduct and without upper management being aware. This theme may be prevalent from different sources.

Discussion Items/Questions for Students:

1. Read the case to understand the issues and challenges.
2. Research the issues presented in this case. Identify related issues in other situations from the press, government releases, and other research. What guides can be obtained from laws, policies, codes of conduct of similar companies, professional codes of ethics, etc.?
3. What are the implications of the issues in this case for the individuals, and company?
4. What ethical framework guided your analysis? Why?
5. If done as a team, what is the basis for different decisions?
6. What are the implications to the individual if they get caught?
7. Do you think D. Maverick is aware of how this might impact S. Simeon? Does D. Maverick care? Should he? Explain your answer.
8. Prepare the presentation of the case as directed (written summary, role play, group discussion, etc.)

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Check the Box

Subjects:

Construction, Decision Making, Ethics, Federal Acquisition Regulation (FAR), Overbilling, Whistleblowing.

Decision Makers:

Owners' Representative, Project Manager.

Background:

This project was a national historic monument being repaired by the federal government. O. Joseph was working for Ladder, an engineering firm that also does construction management (CM) work. He led the presentation to win this contract management representative (CMR) award. He was overseeing multiple repair projects valued at $52MM; four individual contracts performed by different general contractors (GCs). Supentoni was the major GC performing mechanical, electrical, plumbing, and elevator repairs valued at $36MM.

Supentoni performed other projects for this particular agency just prior to this one, with the same project manager (PM) working for the same government contracting officer (COF).

O. Joseph interviewed R. Timi to assist on the project, as he transferred from another Ladder project. R. Timi was a registered architect. O. Joseph had hired a third CMR also.

Team:

P. Annock was project executive; 25+ years with Ladder.
O. Joseph was program manager; 2 years with Ladder, 20+ years experience.
R. Timi was project manager; 1 year with Ladder, 11 year CM experience.
Project Manager: P. Icture, with Supentoni for 20 years, 30+ years experience.

Case:

As the program manager, Ladders' role through a contractual "call order" was to inspect the work, monitor safety, conduct meetings, process requests for information (RFIs) and submittals, approve monthly billings, as the federal government's on site representative. There were instances where O. Joseph did not agree with some billed items; he wrote notes on the bill prior to checking the "Approved" box on the government form.

While reviewing the March billing, he noticed there were a number of contract line items (CLINs) included, but the work was not performed by Supentoni. In fact, some of the CLINs work was performed by another company under an entirely separate contract not managed by Ladder.

O. Joseph questioned P. Icture about these eight CLINs valued at $482,000. P. Icture responded this work was a credit of a "global agreement" previously negotiated between the CO and himself. O. Joseph responded, "this work wasn't completed by Supentoni and won't be, but

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is included in the bill". P. Icture responded there have been areas of the project where we "swapped work and traded dollars".

R. Timi stated the following to O. Joseph toward the end of the project as he was being trained in billing approval; "I know it's wrong to sign the invoice, maybe even illegal, but I also like to have a job".

Part of the monthly billing process included the CMRs going over the bill with the government team; usually via conference call as the agency is out of state. O. Joseph mentioned this "global agreement" conversation and noted Supentoni billing for work they did not, and will not complete. The COF directed O. Joseph to check the "Approved" box and sign the bill, and also told him to stop writing notes voicing his concern.

During a site visit by O. Joseph's supervisor, P. Annock and his supervisor, they discussed the concern.

Instructor Information:

During the two year project O. Joseph recognized a relationship between the government COF and Supentoni PM.

O. Joseph notes there were instances where he was asked to consider and approve traded work; credits for work not performed, instead of following proper federal acquisition regulation (FAR) protocol. O. Joseph refused to do so. The Supentoni project was extremely unsafe.

In December, the government agency decided not to renew Ladders' contract with the government even though work is continuing and even solicit proposals from other companies to perform CMR services on the project.

Discussion Items/Questions for Students:

1. Identify issues in this case involving ethics in the decisions made.
2. What are the responsibilities of each individual team member on the project? To what extent were the responsibilities fulfilled?
   A. Evaluate and weigh the alternative courses of action, decisions each individual made.
   B. What further actions could the team members take to have better outcomes?
3. How do you see personal relationships playing into decisions made?
4. Explain what you would do if you were O. Joseph. Would you make the same decisions?
5. What are the implications of the issues in this case for the individuals involved, the organizations, and the federal government?
6. What ethical framework guided your analysis? Why?

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Government Laboratory

Subjects:

Construction, Decision Making, Ethics, Fraud, General Contractor, Overbilling, Public, Retaliation, Whistleblower.

Decision Makers:

Project Manager(Mechanical and Plumbing), Project Executive, Operations Manager.

Background:

This project was a brand new federal government laboratory project valued at $604MM. Corn Building Group had partnered with Tusk in a joint venture as the Construction Manager (CM). B. Magdalena was the mechanical and plumbing manager who had been with Corn about 3 months prior to relocating for this project. There were approximately 90 managers on this project. The two companies had over 38,000 employees combined worldwide.

The project consisted of 11 different structures joined by a corridor and was built in an under-developed suburb of a major city. B. Magdalena had six individuals reporting to her.

Team:

P. Puffy was senior manager; 10 years with Tusk, 20 years experience.
M. Hand was operations manager; 15 years with Corn, 20 years experience.
V. Circle was MEP manager; 1 year with Corn, 18 years experience.
B. Magdalena was mechanical and plumbing manager; 1 year with Corn, 20 years experience.
C. Stretch was electrical manager; 1 year with Tusk, 19 years experience.
T. Coil was assistant electrical manager; 1 year with Tusk, 16 years experience.

Case:

As B. Magdalena began reviewing change order requests (CORs) submitted by the mechanical and plumbing subcontractors, she began to notice the pricing was not accurate. The very first COR was valued at $414,000, but should have been less than $100,000. This involved perimeter drainage PVC piping that simply increased from four inches to six inches; no increase in scope warranting this amount of money, she thought. She had a discussion with P. Puffy from Tusk about this, and he apparently met with the subcontractors. P. Puffy responded the next day to B. Magdalena they lowered their number by $100,000, and asked "There, are you happy now?"

C. Stretch had conversations with B. Magdalena over the next few weeks about the inflated nature of the CORs. C. Stretch did not get along with his supervisor V. Circle and left the project and Tusk all together fairly early on.

Over the course of the next year, B. Magdalena noticed much of the $70MM in mechanical and plumbing CORs were not accurately priced. She reported to Corn's home office

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and requested an audit. Corn flew a lawyer out to meet with B. Magdalena in an offsite hotel. The lawyer acknowledged what she was reporting as accurate and sent down an auditor.

B. Magdalena had her performance evaluation in mid-December with her supervisor V. Circle and M. Hand. In the performance evaluation, M. Hand stated to B. Magdalena, "The lawyers say that you are going to be the star witness for the government".

Over the course of the next few weeks, B. Magdalena was transferred off the project and placed on a "performance improvement plan (PIP)" for a couple of weeks while working out of Corn's regional office on another small bank project estimate. B. Magdalena resigned prior to the two week period of time expiring.

Instructor Information:

The outside law firm filed a lawsuit with the civilian court of appeals for approximately $1BB in additional funds based on the information B. Magdalena initially brought up. Corn/Tusk were awarded that amount of money. The project was initially $604 million prior to the value being increased to $1.7 billion.

The size of the laboratory project was 11 buildings at the start and finish. The square footage of the project did not increase substantially, if at all. This project was an Integrated Building Design (IBD). The lawsuit and consensus by most was the government agency that managed the project was considered to be at fault due to mismanagement. Another government agency took over the management of the project as Corn/Tusk stopped work at one point.

A fellow teammate T. Coil, called B. Magdalena in mid-January upon her leaving the laboratory project and left the following voice mail "Got your email, I just want to say good luck, umm, hopefully you land on a project that is much saner and better managed than the laboratory, any way good luck to you, take care, bye".

Discussion Items/Questions for Students:

1. Read the case to understand the issues and challenges; identify.
2. Identify issues in this case involving ethics in the decisions made.
3. Explain what your feelings are of how B. Magdalena was treated.
4. Research the issues presented. Identify related issues in other situations from the press, government releases. What guides can be obtained from laws, policies, codes of conduct of similar type companies, professional codes of ethics, etc.
5. What would you do if you were B. Magdalena?
6. Answer the questions above as an employee of Corn/Tusk and then as a government employee? Discuss the differences, if any. Should differences exist?
7. What are the responsibilities of each individual team member; were these fulfilled?
8. What ethical framework guided your analysis? Why?
9. Prepare the presentation of the case as directed (written summary, role play, group discussion, etc.)

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Inaccurate Time & Material Tickets

Subjects:

Construction, Cover-up, Decision Making, Ethics, Public, Overbilling, Whistleblowing.

Decision Makers:

Owners' Representative Project Manager, Field Superintendent, Project & Operations Manager.

Background:

This project was a semi-public University. J. Skukel was working as an owners' representative for Trinity; a construction management (CM) firm. He was managing an interior renovation of an occupied university science and engineering building. There were four other project managers (PMs), two superintendents, two project engineers, one intern, and a project director. On campus for over two years, Trinity managed numerous projects on campus.

The project he was managing was about $1.4MM to be completed in July. T. Rizzo gave him a tour of the larger campus projects on his first day; a new $120MM fitness center and arena. One of T. Rizzo's responsibilities was to keep daily construction reports (DCRs) in the ProCon system. T. Rizzo and P. Hoard were very close. Build Academic Build University; BABU was the general contractor (GC).

Team:

P. Hoard was operations manager (OM); with Trinity for 20+ years.
C. Glory was project director; with Trinity for about 5 years, with 30+ years experience.
J. Skukel was project manager; with Trinity less than a year, with 25+ years experience.
T. Rizzo was field superintendent; with Trinity for 6 years, with 25+ years experience.

Case:

Joe Skukel learned very quickly many of the change order requests (CORs) by BABU were inflated, and many not legitimate. CORs submitted appeared to be for days when workers were not observed to be on site. He checked tickets submitted against certified payroll (CP) and noticed tradespeople not on site. As of July, BABU had submitted about $100,000 in change orders (COs). Much of this CO work had been directed on a time and material (T&M) basis due to BABU not submitting adequate supporting documentation.

The university representative decided to cancel classes scheduled for Fall semester as the project delayed. The $120MM project was also delayed many months. J. Skukel noticed T. Rizzo signed multiple $100,000s of T&M for the larger project also. They talk, and he told him he did not have the time to confirm all of the work prior to signing. J. Skukel noted he did not feel comfortable processing CORs for some of the signed tickets. J. Skukel met in person with T. Rizzo, Trinity's PM and OM.

P. Hoard: What is the problem with processing CORs? J. Skukel replies he has reviewed the CP reports for days of tickets being submitted and they do not match.

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C. Glory: "So what you are saying here is that a man did not do his job".
J. Skukel responds: "No, that is not what I am saying". "What I am saying, is that I have a ticket signed by our company for days when no workers were on site, per CP reports. I do not feel comfortable processing a CO for this, as a result".

P. Hoard states: "There are two issues here. One is the individual is going to get blamed for signing inaccurate tickets, this is a problem created for the individual. Second, Trinity is going to get blamed because T. Rizzo is supposed to be keeping daily logs of all work going on, and we are not doing that. So, as a result, I do not want to hear any more about time and material tickets, and I do not want to hear anything more about certified payroll reports. In fact, I do not want you to review the certified payroll reports anymore."
J. Skukel stayed silent and the meeting ends.

Instructor Information:

At one point in the project, a long-time colleague of J. Skukel who was taking over as project director for C. Glory said to J. Skukel the following. You would support T. Rizzo regardless if you thought his signed T&M tickets were accurate, wouldn't you?

J. Skukel utilized a pragmatic approach to process many T&M COs by writing the following, "Trinity PM indicates this PCO will be processed based on superintendent authorized T&M tickets". As of December, 51 individual T&M tickets were submitted by BABU. The vast majority of each was signed by T. Rizzo and "Verify Time Only" written above the signature. Many of the lump sum COs were being processed and agreed to at about 40% lower than initially sought by BABU.

This $1.4MM project was one of many that T. Rizzo oversaw for the university, signing over $100,000s in T&M. J. Skukel had noticed an unusually close relationship between many of the subcontractors and him.

One of the owners' representative responsibilities was to confirm CP reports are submitted timely and accurately. This is a requirement for federal and state funded projects.

The end-user of the space, the Director for the Engineering Department noted all plans for the prior Fall were scrapped and plans for the Spring included very limited use of the space due to 6-month delay.

Discussion Items/Questions for Students:

1. What are the responsibilities of each individual team member on the project? To what extent were these fulfilled?
2. Evaluate and weigh the alternative courses of action and the decisions each individual made in processing and signing. Identify these.
3. What further actions could each individual have taken related to this issue, have better outcomes, avoid the issue again?
4. How do you see personal relationships playing into this? What if Trinity was a GC? How would any of the responsibilities be different? Why, and should they be?
5. What would you do in each position?

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Tickets to the Game

Subjects:
Bribery, Construction, Decision Making, Ethics, General Contractor, Procurement.

Decision Makers:
Procurement Agent(s), Procurement Manager, General Manager.

Background:
Fippo Construction had over 10,000 employees and had centralized procurement. This regional office managed about $500MM in construction annually. Lump sum hard bid (rip and read), guaranteed maximum price (GMP), cost-plus a set fee were some of the contract models. Fippo had been in business for over 100 years and takes pride on reputation.

Team:
M. Teilly was general manager (GM); 20+ years w/ Fippo, 20 years experience.
W. Kilson was procurement manager; 10+ years w/ Fippo, 11 years experience.
B. Laffa was procurement agent; 5+ years w/ Fippo, 10 years experience.
A. Brove was procurement administrator; 18+ years w/ Fippo, 20 years experience.
S. Ing was subcontractor principal; 38+ years experience for Best Painting.

Case:
B. Laffa is one of two procurement agents who reports to W. Kilson. W. Kilson held in-person buyout meeting each Monday morning to plan.
The following conversation occurred.
W. Kilson: "B. Laffa, you know we have the largest issues with the budget numbers for steel and painting on the Lagger Hospital project".
B. Laffa: "Yes".
W. Kilson: "We'll need to do a combo buy, so award the steel to A-1 Steel for both projects and cover the loss at Lagger with the excess budget money we have on Chosun Bank. Let me see the leveling sheets." B. Laffa nodded in agreement.
W. Kilson: "A-1's numbers aren't that much higher than Ceaser Steel, so make it work. Also, for painting, M. Teilly wants to give the Chosun project to Best. They lost their ass on the stadium project and we need to make it up to them. Steel and painting are the biggest voids we have to fill on Lagger. Estimating really missed the mark on the intumescent issue. We have similar budget issues on that package, so do a combo buy with painting too. Get the numbers and leveling sheets together and we'll go over them before you pull the trigger".
B. Laffa: "OK".

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Later that week. S. Ing from Best Painting came into Fippo's offices. B. Laffa met S. Ing in the lobby and walked with him to his office.
S. Ing: Are you going to game 3? The Sprockets are going to take it in 5."
B. Laffa: "Don't know, tickets are about $600 each on teletix.com".
S. Ing: "Here are two tickets including the V.I.P. club before the game", as S. Ing handed B. Laffa an envelope.
B. Laffa: "Thank you S. Ing".
They stood up and B. Laffa opened the door and led S. Ing out. She wrote up the subcontracts for steel and painting with the awards for both the Chosun Bank project and Lagger Hospital going to A-1 Steel and Best Painting respectively. B. Laffa coordinated with A. Brove to have the principals of each company come in early the next week to sign and initial the contracts.

Instructor Information:

A leveling sheet has a bid number on the top and scope listed. As a subcontractor is scoped out, there may be something the contractor has omitted from their bid to get a complete scope. A procurement agent may add or adjust values to base bid number submitted by the subcontractor in an effort to level or balance the bids received from all subcontractors. Leveling means the numbers at the bottom of a scope sheet should include all equal scopes of work. On private projects, leveling sheets do not need to be public. On public projects major trade purchases over a certain value, or all may have to be.

Research from students may include pattern matching with common themes identified. Systemic ethical transgressions could be matched and that of large construction companies identifying potential systemic fraud as being by a few rogue employees who skirted company policy against the code of conduct without upper management being aware.

Discussion Items/Questions for Students:

1. Read the case to understand the issues and challenges. Identify these.
2. Identify issues involving ethics in the decisions made.
3. Do you think B. Laffa made a good decision by taking the game tickets? Does it matter? Why or why not?
4. What value of tickets make it OK for B. Laffa to take the tickets, if any?
5. Research the issues presented in this case. Identify related issues in other situations from the press, government releases, and other research. What guides can be obtained from laws, policies, codes of conduct of similar companies, professional codes of ethics, etc.?
6. What are the implications for the individual, project, company, or the industry?
7. What ethical framework guided your analysis? Why?
8. Prepare the presentation of case as directed (written summary, role play, group discussion, etc.)

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Personal Relationships

Subjects:

Claims Games, Conflict of Interest, Construction, Culture, Decision Making, Ethics, General Contractor, Overbilling, Public.

Decision Makers:

Project Manager, Project Executive, Owners' Representative.

Background:

This project was a new public library valued at $30MM built over 2 years. J. Jeremy was the senior project manager new to the general contracting (GC) firm named On Top. He learned very quickly there are strong personal relationships between employees and subcontractors. He began working at proposal phase, and led the presentation to the win in April. On Top had about 300 employees and completed about $300MM worth of work every year.

Team:

B. Corvette was the project executive; with On Top for 30 years.
J. Jeremy was senior project manager; with On Top for about 2 years with 25+ years experience.
S. Lamb was project engineer; with On Top for about 5 years.

C. Marley was owners' representative; with Flag Construction Service for about 7 years with 12 years experience.

T. Sprechen was project manager; with LMU Sitework for 20 years.

Case:

J. Jeremy had worked on public projects previously. On Top was one of two GCs invited to submit lump sum bids for this "redevelopment agreement". The township utilized a prior state law identifying "blight areas" being excluded from public bidding laws under the direction of prior administration. The town was an affluent suburb with no area J. Jeremy would consider to be a "blight area".

The sitework contractor LMU completed nearly all of On Top's site contracts. LMUs project manager was T. Sprechen; he did paperwork, billing, and change order (CO) processing.

When J. Jeremy set up the project billing and received a schedule of values (SOV) from LMU, B. Corvette told him not to amend it let the owners' representative make any decisions to do so. Later, similar direction was received regarding change order requests (CORs) for LMU. Although On Top's entire contract was valued at about $30MM, at about 12% billing completion, LMUs subcontract change orders were over $550,000.

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The owners' representative C. Marley was currently working with LMU on another project within an hour of the new public library; there was a relationship there. LMUs CORs appeared to be processed with very little modification, while others receive much greater scrutiny. In one meeting in October regarding extra work for soil relocation, C. Marley informed LMU the value they need to be competitive with the other two bidders; LMU then immediately lowered from $130,000 to $105,000. J. Jeremy and S. Lamb attended the meeting that C. Marley of Flag requested.

S. Lamb is a 29 years old civil engineer who J. Jeremy mentored and asked him what he thought from time to time. "I'd be pissed if I was the town with what is going on here" he responded.

Instructor Information:

B. Corvette is very close to LMU. S. Lamb did not know how to process submittals, write RFIs, or meeting minutes upon beginning the project. J. Jeremy had been training this college graduate who was previously employed as a soil tester. LMU would go around J. Jeremy and have direct conversations with the owners' representative.

J. Jeremy continually requested On Top's field superintendent to have LMU perform subcontract required site duties, such as clean up, etc, which they may have completed sometimes. LMU continually did not attend the weekly coordination meetings. LMU were always the first subcontractor demanding payment and usually receive within 2 days per B. Corvette's direction.

S. Lamb had left On Top about a year after J. Jeremy did, both did not last to see the completion of project. As of four years after breaking ground in February, the project scheduled to be complete in two years was not complete. During this month in February, J. Jeremy received a text from S. Lamb telling him the town declared On Top to be in default of their contract.

Discussion Items/Questions for Students:

1. Read the case to understand the issues and challenges. Identify these.
2. Identify issues in this case involving ethics in the decisions made.
3. What information is important to inform decisions by those involved?
4. How do you think the experience S. Lamb had impacts his view of construction, and of individual members of the team?
5. What is the percentage of LMUs COs? What may this be indicating?
6. What were the implications for the individuals, project, and company?
7. What were the responsibilities of each individual team member on the project? To what extent were the responsibilities fulfilled?
8. What ethical framework guided your analysis? Why?

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Overbilling Direction by Client

Subjects:

Claims Games, Construction, Decision Making, Ethics, Federal Acquisition Regulation (FAR), General Contractor, Overbilling.

Decision Makers:

Project Manager, Project Controls Manager, Project Executive, Owner.

Background:

This project was at an existing federal government facility. Dolan Federal Group was managing three projects totaling $22MM spread out over three firm fixed price contracts over 14 months. Dolan was 150 years old with over 2,800 employees. The projects included mechanical, electrical, plumbing (MEP), structural, interior fitout, and other improvements on a design-bid-build basis. The ELAB included interior renovation and installation of state of the art laboratory equipment for experiments and analysis valued at $12,300,000. A S1BB program was coming to a close in sync with the ELAB, 5Q, and TAP projects. 5Q were MEP upgrades valued at $7,155,000.

Team:

G. Loose was project manager for the ELAB Building, 10+ years with government.
D. Lane was project manager for the 5Q project, 20+ years with government.
E. Damone was project executive, 25+ years at Dolan.
J. Ada was senior project manager, less than 1 year at Dolan.
S. Starry was senior project controls manager, 7 years at Dolan.
L. Lupe' was ELAB project superintendent, 7 years at Dolan.

Case:

J. Ada submitted monthly pencil requisitions for ELAB and 5Q projects concurrently as billings for both are included under one contract. D. Lane was a stickler for costs and questioned every aspect 5Q percentages complete; 5Q was on schedule.

ELAB was another story and was months behind schedule. S. Starry was Dolan's project controls manager who kept an accurate project schedule and billing documents in the digital filing system. As he was offsite, he ran remote meetings which included projecting percentages on the monitor in the conference room. The superintendents were very busy in the field and it was difficult to find time to join, but did. Per the Federal Acquisition Regulation (FAR), percentages complete for both work installed and billed need to correspond. Taking at least an hour for each project, the team went through each and every line item and updated percentages. There were 330 line items for the ELAB project and 220 line items for 5Q.

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ELAB had a building schedule of 12 months to put work in place. Government senior management calculated each month $1,025,000 needed to be billed on average, using this as a way to monitor schedule; if the project fell behind. G. Loose continually increased Dolans' line item percentages to achieve this value. L. Lupe' sat in these meetings where S. Starry followed G. Looses' direction to increase line item percentages. S. Starry later voiced concern to J. Ada on the telephone that this was not per the FAR. J. Ada repeated his concern to E. Damone multiple times. E. Damone acknowledged to J. Ada of S. Starry's concern.

Instructor Information:

Monthly payment applications (billing) is arguably the single most important aspect of any project from a contractors' view. For typical projects, bills are submitted by the 25th of the month. The pencil requisition (draft bill) is usually projected to end of the month by the contractor, although the FAR does not allow for this. During this review period, the contractor indicates percentages complete for client comment and approval. The client sometimes, and often lowers percentages submitted, very rarely increases. The FAR has stringent requirements for federal projects.

Discussion Items/Questions for Students:

1. Read the case to understand the issues, challenges, and constraints. Identify these.
2. Identify issues in this case involving ethics in the decisions made.
3. If the work was going to be installed anyway, what difference does billing early make?
4. What information was important to inform decisions by those involved? Research the issues presented in this case. Identify related issues in other situations from the press, government releases. What guides can be obtained from laws, policies, codes of conduct of similar type companies, professional codes of ethics, etc.
5. What would you do? Who was wrong here, if anyone?
6. What were the implications to the individuals, Dolan, the government representatives?
7. What were the responsibilities of each individual team member on the project? To what extent were the responsibilities fulfilled?
8. How would you speak up if you chose to? How might this impact your career?
9. What ethical framework guided your analysis? Why?
10. Prepare the presentation of the case as directed (written summary, role play, group discussion, etc.)

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Snorkel HVAC Exhaust Potential Change Order (PCO)

Subjects:
Claims Games, Construction, Culture, Decision Making, Ethics, Overbilling, Owners' Representative, Private, Whistleblowing.

Decision Makers:
Project Manager, Owners' Representative.

Background:

This 3 year project was a new science laboratory valued over $250MM at a private university. The contract type was guaranteed maximum price (GMP), set in a union shop. J. River was hired as an owners' representative. RV Construction was the construction manager (CM).

Case:

COR 545 was submitted by RV for Horns Mechanical to install five (5) new fume hood HVAC snorkel exhausts; J. River reviewed. Horns Mechanical was requesting $2,490 each. This is an exhaust apparatus that evacuates air from a fume hood or laboratory desk. It is made out of PVC piping, roughly 4 feet high and made of 4 inch diameter PVC pipe material. Horns' COR documentation indicated snorkel exhausts furnished by others, only installation was the added scope of work. As with all of the CORs, RV was responsible to review legitimacy and accuracy of value. RV received a percentage fee of every dollar of a CO. RV also managed the Contractor Controlled Insurance Program (CCIP). For this COR of $12,452, RV Casualty had included $404 for CCIP.

J. River reviewed a previously processed COR 015 pertaining to snorkel exhausts, including detailed breakdown of some removed from scope. He noticed the unit price included in typed text for this spreadsheet was $1,000 per unit, for a total credit of $100,000. However, the $1,000 per unit and $100,000 had a strike-through and is replaced by handwritten values of $340 and $34,000, respectively. A quantity of 100 each unit valued at $340 per unit, or $34,000 was removed from the contract at this value.

J. River noticed this, and felt a credit amount of $340 each appear very low. She noted this to be especially troublesome because Horns Mechanical was requesting $2,490 to install the exact same scope. The credit CO was previously signed and approved by the project manager (PM) of the MEP design firm, as well as the PM for the architectural design firm. The university project manager approved same as he signed under the MEP and architect's signature on the approval letter.

J. River reported these irregularities to university management. University management did not act on the prior processed COs to her knowledge.

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Instructor Information:

Credits on project may be given much less attention than adders, but shouldn't. In this instance, it appears identical work removed from contract was credited at a much lower value than it should have. When requested to add back in, a value much higher is requested. Keep in mind economies of scale result in reduced cost for greater quantities, within reason.

Upon her arrival on the project, J. River had the following comments made to her. She had professional relationships with many of the individuals involved. She had known and worked closely with the individuals for many years, as she worked for RV previously.

- RV's PM: "If you are starting out here to review our change orders, we are in deep poo poo".
- VP of mechanical subcontractor during a walk on the project: "Pigs get fat, hogs get slaughtered, have we made 15% to 20% more than we should on extras out here, yes we have, have we made 50%, no we haven't…".
- RV's OPM: "It's a credit, so approve it…what are you waiting for?".

Discussion Items/Questions for Students:

1. Read the case to understand the issues and challenges. Identify these.
2. Identify issues involving ethics in the decisions made.
3. Do university representatives have a responsibility to safeguard university money? Are they doing this in this example? If issues were discovered, should monies be recovered retroactively?
4. What were the implications of the issues in this case for the larger project?
5. How do you view this project if you are an owners' representative?
6. How do you see it as a general contractor? Do you see it differently? Should there be a difference?
7. What ethical framework guided your analysis? Why?

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Organization Charter

Subjects:

Claims Games, Construction, Culture, Decision Making, Ethics, Overbilling, Owners' Representative, Private, Whistleblowing.

Decision Makers:

Project Manager, Subcontractor, Owner.

Background:

Ivy University was a private university with a very prestigious reputation. B. Sis was hired as owners' representative by the director of construction. The director and she had a good relationship and she talked B. Sis into starting her own consulting company to oversee Foo Construction. Having over 10,000 employees, Foo was B. Sis' former employer. Ivy have alumni who donate great sums of money; some benefits include having the building named for them. General contractors (GC) and subcontractors were eager to work at Ivy due to the lucrative nature of the contracts.

The contract type was guaranteed maximum price (GMP) of $265,200,000 for a brand new life sciences building, set in a union shop. Foo was construction manager (CM), and had submitted thousands of change order requests (CORs). There was a backlog and university representatives overwhelmed. B. Sis began her work when the project was approximately 80% complete; approximately 700 of 1143 CORs already processed. She learned very quickly many of the change orders (COs) processed were for much more than they should have been.

Foo also had their own subsidiary insuring the project, as well as bonding the subcontractors; known as Foo Casualty and Insurance Company (FCIP) and Foo Guard.

Case:

As of the close of B. Sis' work at Ivy University, $29,607,000 in changes had been issued to Foo. During a six month assignment, she identified $822,000 worth of savings in a very limited review of the COs. Foo charged a fee for each CO, revenue is gained via FCIP and Foo Guard.

An area of concern B. Sis identified to Ivy's director are allowances included in subcontracts. For example, she noticed a number of subcontracts included allowances for full time safety manager; such as concrete at $55,000, sheet metal $180,000 to name a few. Foo already had safety managers working for Foo included in the GMP budget billed to Ivy.

Another area of concern B. Sis identified are labor rates. She noticed all COs for all trades include labor rates higher than accepted prevailing county wages, and as much as 11.5% higher than project agreed upon rates.

In general, credits offered for the same work as adders were much lower in value. An email received from the designer states "one of the difficulties in the negotiation has been the

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small credits received for elimination of drywall ceilings for replacement with acoustical panels".

Following a month of review of the project, she noted the following summary values (rounded).

GC's – $21,726,000
Total direct work = $238,400,000
Foo fees = $5,072,000
Total cost of project = $265,200,000

Instructor Information:

Upon her arrival on the project, B. Sis had the following comments made to her. She had professional relationships with many as she worked closely with the individuals for many years.

- Foo PM: "If you are starting out here to review our COs, we are in deep poo poo".
- Subcontractor VP: "Pigs get fat, hogs get slaughtered, have we made 15% to 20% more than we should on extras out here, yes we have, have we made 50%, no we haven't…".
- Foo PM: "It's a credit, so approve it…what are you waiting for?".

After 6 months of working on the project, she formally submitted verification of $822,000 of identified itemized savings. The university did not act upon these savings to her knowledge. Open CORs at completion of B. Sis' contract were over $2,000,000.

Discussion Items/Questions for Students:

1. Read the case to understand the issues and challenges. Identify these.
2. Identify issues in this case involving ethics in the decisions made.
3. Did university representatives have a responsibility to safeguard university money? Were they doing this? Should the savings B. Sis discovered be recovered retroactively?
4. What was the percentage of COs compared to direct work? What may have this be indicating?
5. What was the percentage of GCs compared to total contract amount? How does this number compare to other projects?
6. What were the implications of the issues for how the university CM department operates?
7. What were the responsibilities of each individual team member on the project? To what extent were these fulfilled?
8. How do you view this project if you are an owner's representative? How do you see it as a general contractor? Do you see it differently? Should there be a difference?
9. What ethical framework guided your analysis? Why?

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Labor Rates

Subjects:
Claims Games, Construction, Culture, Decision Making, Ethics, Overbilling, Private.

Decision Makers:
Project Manager, Subcontractor, Owner.

Background:

This three year project was a new science laboratory valued at $260MM at Blue; a private university. The contract type was guaranteed maximum price (GMP), set in a union shop. L. Joseph was hired as an owners' representative to process the very large number of change order requests (CORs) submitted by Somers Construction. Somers had been in business for over 100 years with over 10,000 employees.

She began her work when the project was approximately 80% complete. Approximately 700 of the 1143 change order requests were already processed. She learned very quickly many of the change orders (COs) requested were inflated, with over $25MM already processed. CORs 1 – 650 valued at approximately $18MM were not reviewed by L. Joseph, CORs 651 - 700 valued at $4MM partially were reviewed by her, CORs 701 – 1143 valued at $7MM were reviewed by her. Currently L. Joseph was processing 47 CORs per week on average.

Case:

L. Joseph had worked on this large campus previously. General contractors (GC) and subcontractors were eager to work at Blue due to the lucrative nature of the contracts. In order to process some of the current COs, she needed an understanding of the subcontracts, and also of what prior COs had been processed.

One of the tasks at the beginning of the project was for the GC to submit labor rates for all trades for review and approval by Blue representatives. This occurred and L. Joseph had those approved labor rates.

L. Joseph reviewed COs submitted by Huggies Fire Protection, noticing 25 processed already. Of the 25 processed and paid, all of them had inflated labor rates. A fire protection installer's approved rates were $82.49, with a foreperson rate at $88.15. COs included a rate of $107.38, with a foreperson rate at $116.25. The $847,000 in change orders written in the last two years included 488 sprinkler fitter hours and 580 foreperson hours. Reviewed by the designer, Huggies total COs were submitted for a total $912,000 and processed for a lowered amount of $847,000, however this reduction did not involve labor rates.

L. Joseph performed a similar evaluation of Looper Sheet Metal and found $88.82 to be the approved labor rate, but a $94.61 rate included in COs.

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L. Joseph then performs and analysis of 36 individual trades included in prior COs. Every single trade had labor rates higher than county prevailing labor rates; elevator construction foreperson 11.5%, insulator and carpenter foreperson by 11.1%, electrical foreperson by 11%, bricklayer, laborer, and plumber over 10%, 6 trades over 9%, 7 trades over 8%, 3 trades over 7%, and 3 trades over 6%.

After Somers was notified of these findings, Somers' project manager sent an email to her stating a commitment, "to correct any labor rate overcharges that have occurred in the past based on those approved rates…We have a commitment to [Blue University Purchasing Manager] that as we closeout subcontractors, Somers will reconcile all labor rates". Somers also indicates they will use the prior approved labor rates on all future CO requests.

Instructor Information:

Upon her arrival on the project, L. Joseph had the following comments made to her. She had professional relationships with many individuals. She knew and worked closely with the individuals for many years, as she worked for Somers previously.

- From Somers' PM: "If you are starting out here to review our change orders, we are in deep poo poo".
- From a mechanical subcontractors' VP during a walk on the project: "Pigs get fat, hogs get slaughtered, have we made 15% to 20% more than we should on extras out here, yes we have, have we made 50%, no we haven't…"

After 6 months of working on the project, L. Joseph submitted verification of $800,000 of identified cost savings for items reviewed. Savings not acted upon to her knowledge.

Labor unions in the area usually have 3 year agreements. Labor rates increase with inflation, but not at rates included in this example. Also, the percentage differences listed here were actual county listed prevailing wage rates on the date of the CO.

Discussion Items/Questions for Students:

1. Read the case to understand the issues and challenges. Identify these.
2. Identify issues involving ethics in the decisions made.
3. Did university representatives have a responsibility to safeguard university money? Were they doing this? If issues were discovered, should monies be recovered retroactively?
4. What was the percentage increase of Huggies' labor rates? What may this have been indicating?
5. What was the total amount of additional labor dollars that resulted for Huggies?
6. Was there an explanation why Somers would be charging labor rates much higher than the county prevailing rates submitted and approved at the beginning of the project?
7. How do you view this project if you were an owner's representative? How did you see it as a GC? Did you see it differently? Should there be a difference?
8. What ethical framework guided your analysis? Why?

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Screamer

Subjects:

Construction, Culture, Design-Build Contractor, Decision Making, Ethics, Harassment, Human Resources, Owners' Representative.

Decision Makers:

Project Manager, Human Resources Manager.

Background:

Cooster was an international design firm who had over 16,000 employees globally. The firm had been in the middle of an infrastructure project valued at about $250MM with the client being the city's transportation agency. C. Ebby was a senior construction manager for Cooster. Due to the project being over budget and years behind schedule, the transportation agency had hired an owners' representative firm Stickman to manage Cooster.

H. Shih was an owners' representative who C. Ebby has been informed is responsible for many Cooster managers being removed from the project.

Case:

C. Ebby had been with Cooster for about 3 months. This particular Monday, he received a call from the deputy project manager from Stickman. H. Shih did not like that C. Ebby documented a conversation they had last week in an email stating, "I don't want to see another email that starts with "As discussed". "I don't like your style, and you need to stop, you need to stop it right now". H. Shih raised his voice and begins screaming over the telephone, "I am the client here, YOU WORK FOR ME!" C. Ebby calmly responded and the conversation ended.

The following week, C. Ebby was in his office midtown and he received a call from a 28 year old site lead who sounded to be near tears on the telephone. The site lead said, "I am only trying to do the right thing, I am only trying to do the right thing. I don't know why he is yelling at me. I am only trying to do the right thing". C. Ebby said "Calm down, what happened?" The site lead then indicated that H. Shih screamed at him about some Jersey barriers that arrived on the project site and would not stop screaming at him.

In the next hour, C. Ebby had a conversation with the subcontractor project manager who witnessed the incident. He said, "I cannot believe what I just saw, I cannot believe nobody has brought that guy up on charges yet. I cannot believe how he treated [name withheld]. He was so upset, I told him to suck it up and pull himself together, he was really upset".

C. Ebby had a discussion with another Cooster manager 5 months later; he was aware of the incident and mentions to C. Ebby the site lead called him petrified of repercussions of what H. Shih would do if the telecommunication line schedule was not met.

C. Ebby filed a complaint with Coosters' human resources (HR) department noting both incidents and how he did not intend to file a complaint until this most recent incident occurred involving someone who reports to him. The chief HR representative responded the project had a

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number of complaints filed, and this particular individual H. Shih has a number of complaints filed against him. She went on to say someone will follow-up regarding this, however, H. Shih worked for a different company and this involves our HR contacting the other organizations HR. She went on to say that it is also a factor that the site lead was not a Cooster employee, but a contractor.

Instructor Information:

C. Ebby discussed the issue with a fellow senior construction manager at Cooster who then states he "experiences harassment everyday", and had filed a complaint, and he had a folder full of derogatory emails he had forwarded to the project manager and deputy PM with no response or action. The senior construction manager said to C. Ebby, they are not going to do anything. Another Cooster manager mentions to C. Ebby that H. Shih was responsible for the removal of Coosters' top project manager years earlier.

In a separate conversation, the deputy PM discussed with C. Ebby that H. Shih and his supervisor both referred to the other senior construction manager as a "Hungarian Hernia" repeatedly and he was aware of the HR complaint resulting.

Discussion Items/Questions for Students:

1. Read the case to understand the issues, challenges, and constraints. Identify these.
2. Identify issues involving ethics in the decisions made.
3. Explain if you felt C. Ebby was justified in filing an HR complaint? Why or why not?
4. How did you feel about the phrase the site lead just needs to "suck it up"?
5. Explain if C. Ebby made the right decision? Explain if you would do the same?
6. Explain if you felt surprised at HR's inaction? What could or should HR do?
7. Research the issues presented in this case. Identify related issues in other situations from the press, government releases, and other research. What guides can be obtained from laws, policies, codes of conduct of similar companies, professional codes of ethics, etc.?
8. What were the implications of the issues in this case for C. Ebby's career?
9. What were the implications of the issues in this case for the project?
10. What were the responsibilities of each individual team member? To what extent were the responsibilities fulfilled?
11. What ethical framework guided your analysis? Why?

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Women Flaggers

Subjects:

Construction, Decision Making, Ethics, Equal Opportunity, General Contractor, Women participation.

Decision Makers:

Management, Owner Management.

Background:

This project was building a new university stadium in the middle of campus. Entimen was the general contractor (GC) managing the $220MM stadium. P. Art is a site observer.

Case:

During the visits P. Art walked around the new stadium being built and took pictures. Each time he noticed the entry points of the project only women are watching the gates. He recognized the same women each week and engaged in small talk, understanding they are probably wondering what he is doing. He recognized that not one of the half dozen attendants he sees each week are male. Similarly, during another visit there was some street work going on surrounding the stadium by Entimen, and he noticed the flaggers holding the "slow" and "stop" signs were all female. As he observed workers in personal protective equipment (PPE), he noticed most workers appear to be male, but also recognized gender is not always recognizable.

P. Art recalled conversations he had during his 25 years in the construction industry where he was told by management that a good way to get the project women workforce numbers up are by hiring flaggers.

About four years after this case study occurred, P. Art managed a federal government project. He led and participated in "all hands" meetings each morning in the project trailer(s). At certain times, he very informally surveyed gender of the workforce simply by counting meeting attendees. The amount of women participating in meetings of 80 workers was one manager, and one female pipe fitter.

He was walking around a U.S. federal renovation project about five years after this case study occurred and noticed a sign above some scaffolding that read "Men Working Above". He thought at that time of the importance of language.

Instructor Information:

Minority and women participation in construction could be measured a couple of ways; business enterprises and workforce requirements. Minority Business Enterprise (MBE) and Women Business Enterprise (WBE) are included in "target goals" dollar amount an organization may have in the purchasing department. These are "target goals" because quotas are considered illegal, and these may amount to about 30% of contract values of projects. A second method of participation is via workforce. The amount of managers and workers may be measured to include certain amount of minority, women, local, veteran, and other classifications of workforce.

He noticed only a single women tradesperson in the morning all-hands meeting over a number of days, and reported the findings to a female vice president (VP) of the organization. The VP acknowledged and responded to watch what happens over the next few years within the organization and women participation.

An important part of the construction industry is learning and growth. An electrician may start out as an apprentice and then as career progresses, journey electrician, master electrician, etc. A laborer may develop into an equipment operator or labor foreperson; increasing responsibility and compensation. If an individual was put in a position of watching a gate or turning a flag, although these roles are important, what growth potential does this individual have?

Discussion Items/Questions for Students:

1. Read the case to understand the concepts. Identify these.
2. Identify issues in this case involving ethics.
3. Explain if you feel members of the team were being treated fairly.
4. Explain if the female flaggers were provided the same opportunity as tradespeople, the same growth potential for a career and wages.
5. What were the responsibilities of management of the project? Were these being met?
6. What were the responsibilities of management of the organization? Were these being met?
7. What were the responsibilities of the owner? Were these being met?
8. Explain if this was permissible? What ethical framework guided your analysis? Why?
9. Explain if, and why public and private projects have women participation requirements or goals; for contract dollar amounts and workforce?

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Buyout Credits

Subjects:

Construction, Decision Making, Ethics, Fraud, General Contractor, Overbilling, Procurement.

Decision Makers:

Procurement Agent(s), Procurement Manager.

Background:

Big Ted Construction with 10,000 employees was a general contractor (GC) having centralized procurement. D. Sedona was a procurement agent who wrote subcontracts. This regional office managed about $500 million of subcontract awards annually. Lump sum hard bid (rip and read), guaranteed maximum price (GMP), cost plus a set fee, are some of the contract models. Big Ted had been in business for over 100 years and takes pride on reputation.

Team:

B. Dea was procurement manager; 10+ years with Big Ted, 11 years experience.
D. Sedona was procurement agent; 5+ years with Big Ted, 10 years experience.
M. Donnelly was procurement agent; 2+ years with Big Ted, 4 years experience.

Case:

B. Dea held an in-person meeting with the team each Monday. He began the meeting by distributing a hardcopy "Buyout Credit" spreadsheet to D. Sedona and M. Donnelly. The spreadsheet included subcontractor names and values of credits with each subcontractor. The values of each credit are from $10,000 to $300,000 each, with a total being about $2,000,000. These values represented money from prior awards from projects that were budget surplus' (cash rich) for use in the future for political dinners, donations, contributions, or cover overruns on other projects.

B. Dea: "The credits are good, but we need to use the Bamberg project to increase the amounts".
D. Sedona: "Got it".
B. Dea: "Let's see the procurement schedules for the projects that you are working on".
D. Sedona: "Here are my current schedules for the Bamberg project, as well as Crivers".
M. Donnelly: "Here are my current schedules for the smaller interior projects I am buying out".
B. Dea: "Sedona, you know we talked about the issues with Crivers hospital project and you may need to do some combination (combo) buys as a result".
D. Sedona: "I know".

Estimating and procurement worked hand in hand prior to bid day to collect bids, total them, and submit Big Ted's bid for both lump sum and guaranteed maximum price (GMP) projects. At that time, Big Ted has a problem of lack of money for a lump sum award at Crivers. The Bamberg project was a GMP with plenty of cash.

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In the procurement meeting, M. Donnelly asked D. Sedona how she is going to make buyout targets for the Crivers hospital project since so much money was left on the table? D. Sedona tells M. Donnelly, "Don't worry about it; we have ways of making things work".

D. Sedona wrote up subcontracts for steel and painting that awarded both the Bamberg project and Crivers Hospital to Harper Steel and Crimson Painting respectively. The shortfalls of Crivers Hospital were paid by extra money in the budget for the Bamberg project.

Instructor Information:

The research from students may include pattern matching and common themes identified such as systemic ethical transgressions. A topic could be organizations identifying systemic fraud as being by a few rogue employees who skirted policy against the code of conduct and without awareness of upper managements.

As a subcontractor is scoped, there may be something omitted from their bid to get a complete scope. A procurement agent may add, or adjust values to base bid in an effort to level or balance the bids received from all subcontractors. Leveling means values at the bottom of sheet should include all equal scopes of work. On private projects, leveling sheets do not need to be public. On public projects, major trade purchases over a certain value; or all are published.

Discussion Items/Questions for Students:

1. Read the case to understand the issues, challenges, and constraints. Identify these.
2. What information was important to inform decisions of those involved?
3. What were the implications to the individuals involved, the project, and the company, if exposed?
4. What ethical framework guided your analysis? Why?
5. If done as a team, what was the basis for different decisions?
6. How would you speak up if you chose to? How might this impact your career?
7. Prepare the presentation of the case as directed (written summary, role play, group discussion, etc.)
8. Research the issues presented in this case. Identify related issues in other situations from the press, government releases, and other research. What guides can be obtained from laws/policies, codes of conduct of similar companies, professional codes of ethics, etc.?

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Combo Buy

Subjects:

Construction, Decision Making, Ethics, Fraud, General Contractor, Overbilling, Political Contributions, Procurement.

Decision Makers:

Procurement Agent(s), Procurement Manager.

Background:

Big Blue Construction had over 10,000 employees. This regional office had centralized procurement managing approximately $500 million in subcontracts annually. Lump sum hard bid (rip and read), guaranteed maximum price (GMP), cost-plus a set fee are some of the contract models. Big Blue had been in business for over 100 years and prides itself on reputation.

Team:

Procurement Manager: L. Orson, 10+ years with Big Blue, 11 years experience.
Procurement Agent: D. Marc, 5+ years with Big Blue, 10 years experience.
Senior Estimator: D. Nunez, 10+ years with Big Blue, 12 years experience.
Procurement Administrator: A. Field, 18+ years with Big Blue, 20 years experience.

Case:

D. Marc was one of two procurement agents who reported to L. Orson. D. Marc was procuring (buyout the subcontracts) of a large renovation project valued at about $150 million for a financial organization client, Bamberg. The contract type was a GMP.

D. Marc was procuring two other projects; one was a GMP and lump sum. The lump sum was a $35,000,000 children's hospital called Barnies Hospital that was not-for-profit. A lot of money was left on the table at Barnies, meaning Big Blue's bid was about $4 million less than the next lowest bidder. The entire estimating and management staff was aware of the financial risk with Barnies.

L. Orson and D. Marc had an in-person meeting.

L. Orson:

> "Steel on Barnies is a $60,000 issue. We have an extra $150,000 in Bamberg's budget. Write a contract to Harper Steel for $28,400,000 and show a savings of $10,000 about - don't make the numbers that even…you know that. On Barnies, that will leave us with about $90,000 savings to show to Bamberg. On to painting, let me take a look."
>
> "I cannot understand how D. Nunez missed the intumescent on the steel".

He puts down the steel leveling sheet and reviewed painting. A. Field came in and sits at her desk and said good morning to both of them.

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L. Orson while doing some calculator entry:

> "Barnies' painting has a $220,000 bust. Move $210,000 to Barnies from Bamberg, and do a combo buy for…A combination contract to Crimson for $4,200,000 for both projects, including the intumescent issue. This will also include the $720,000 that Crimson lost on the stadium. The Barnies budget for painting will show about a $7,000 loss but that's OK, we'll tell them we had a bust and that Big Blue will suck that one up for the hospital".

D. Marc: "OK, sounds good".

A. Field said to D. Marc "It sounds like your busy already this morning". D. Marc wrote up the subcontracts for steel and painting with the awards for both Bamberg and Barnies Hospital going to Harper Steel and Crimson Painting respectively. D. Marc coordinated with A. Fields to have the principals of each company come in early the next week to sign and initial the contracts.

Instructor Information:

Centralized procurement is a method of writing construction subcontracts and agreements in main office, rather than in field by the project staff. A leveling sheet has a bid number on the top and scope listed. As a subcontractor is scoped, there may be something the contractor has omitted from their bid to get a complete scope. A procurement agent may add numbers to base bid number submitted by the subcontractor in an effort to level or balance the bids received from all subcontractors. These values may be adjusted. Leveling means the values at bottom of scope sheet include all equal scopes of work. On private projects, leveling sheets do not need to be public. On public projects, major trade purchases over a certain value need to be, or all.

Pattern matching and common themes should be identified through research. Systemic ethical transgressions or that of large construction companies stating issue may be merely a few rogue employees skirting policy against the code of conduct without upper management being aware could be found in articles.

Discussion Items/Questions for Students:

1. Read the case to understand the issues and challenges. Identify these.
2. Identify issues involving ethics in the decisions made.
3. Research the issues presented in this case. Identify related issues in other situations from the press, government releases, and other research. What guides can be obtained from laws, policies, codes of conduct of similar companies, professional codes of ethics, etc.?
4. What were the implications of the issues in this case for individual, project, company, and industry?
5. What were the responsibilities of each individual team member? To what extent were these fulfilled?
6. What ethical framework guided your analysis? Why?

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Water Supply Piping

Subjects:
Construction, Cover-Up, Decision Making, Ethics, General Contractor, Safety, Quality.

Decision Makers:
Procurement Agent, Procurement Manager, Operations Manager, General Manager.

Background:

This project was a newly constructed very exclusive high-rise residential condominium tower on a city waterfront called Freedom Quarters. L. Patty was a purchasing agent for Tritip Construction. Tritip had over 10,000 employees and this regional office performed about $500MM worth of work every year. Tritip completed construction about three years prior.

Team:
T. Radcliff was general manager; 15+ years with Tritip, 15 years experience.
N. O'Shoughnasy was operations manager; 12+ years with Tritip, 20+ years experience.
P. Orals was procurement manager; 8+ years with Tritip, 10 years experience.
L. Patty was procurement agent; 10+ years with Tritip, 14 years experience.

Case:

P. Orals discussed with the team during the Monday meeting that he had a special assignment for L. Patty. P. Orals said we have a meeting in N. O'Shoughnasy's office at 1PM. N. O'Shoughnasy was reviewing laboratory photographs of sections of piping showing much of the area filled with oxidized multi-colored gunk inside. "I can't believe people are drinking water from these pipes" he said as L. Patty and P. Orals were behind him at his desk paging through the report. The consulting engineering report was titled "Hot Water Piping Corrosion Damage – Freedom Quarters" with the state listed.

T. Radcliff says to L. Patty:

> "we have a special assignment for you, this water piping needs to be replaced at Freedom Quarters, this needs to be kept on the low down". "We need you go there, get an idea of the scope of work and have Central Eastern Mechanical Contractors replace it, R. Baker Plumbing installed all of this foreign piping that needs to be replaced".

L. Patty went back to his office and began reading the report from the consulting engineer. The report had been commissioned by Freedom Quarters directly, and not Tritip. L. Patty read that the pipe began leaking in numerous areas within three years of installation. The report included, "the inner surfaces of the pipe exhibited thick mounds of deposit and significant corrosion…" It noted entire sections of residential floor piping was removed and replaced, and more leaks presented themselves.

L. Patty read on:

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"After removing deposits, it was evident that the locations beneath deposit had sustained significant corrosion wastage for domestic hot water service less than 3 years…Pipe wall thickness loss due to corrosion was noted to be 32%...very severe...Energy dispersive spectroscopy (EDS) indicated transverse specimens...of…inner deposits…acquired spectrum peaks of iron, manganese, silicon, inner and outer surface coatings exhibited large peaks of zinc and small peaks of iron and aluminum indicating the pipe to be galvanized on both surfaces". Chlorine and calcium present from the domestic water."

The microbiological analyses concluded with:

"Clearly, results indicate significant levels of bacteria associated steel corrosion were present in the galvanized domestic hot water piping deposits and very likely contributed to the corrosion and leaks. Analysis of the elemental water soluble chemistry revealed the domestic hot water at Freedom Quarters met the EPA National Primary and Secondary Drinking Water Standards for the testing elements, pH, and total solids."

The report concluded, "improper welding of the seam, resulting in deep flaws, is the root cause of the excessive deposit buildup, wastage and pitting, and leaking".

L. Patty visited the Freedom Quarters high rise to get an idea of the contract requirements. While inspecting, she held a door open for a new mother with baby in a stroller. L. Patty created a scope of work for the pipe replacement and awarded to Central Eastern Mechanical for $1,280,000. The scope of work included specific requirements for ceiling removal and construction work occurring in an occupied residential housing complex.

Instructor Information:

To L. Patty's knowledge, Freedom Quarter's residents were not informed of the issues involving the corroded domestic water piping. Approximately four years after the award of the pipe replacement contract, Tritip sued R. Baker for breach of contract. Tritip noted in lawsuit that copper pipe was specified and should have been installed. Tritip alleged that even though the galvanized pipe was approved via the submittal process, formal changes to contract can only be made via written change order. Tritip was general contractor overseeing the installation of the piping by R. Baker from start to finish, and then indicated R. Baker completely at fault.

Discussion Items/Questions for Students:

1. Explain if you feel members of the team acted responsibly.
2. What, if anything did Tritip do wrong? What, if anything did R. Baker do wrong?
3. Explain if you feel Freedom Quarters should have informed the residents regarding the issue. Are we sure they didn't?
4. Do you trust the consulting engineers' report? What if the results on EPA drinking water requirements were inaccurate? What repercussions could there be?
5. What were responsibilities of management of each organization, were these being met?
6. Explain if this OK? What ethical framework guided your analysis? Why?
7. Explain the merits of the lawsuit Tritip filed against R. Baker more than five years after the piping was installed. Why do you feel this way?

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Near Miss

Subjects:
Conflict of Interest, Construction, Culture, Decision Making, Ethics, Public, Safety.

Decision Makers:
Project Manager, Safety Manager, Project Executive.

Background:

This project was a new public library valued at $30MM built over two years. J. Sebastian was the senior project manager new to general contracting (GC) firm, Pinnacle. He learned very quickly there are strong personal relationships among employees there for decades and subcontractors. J. Sebastian began his work at the proposal phase and led the presentation to the town council to win the project. Pinnacle had been in business for over 50 years, had about 300 employees, and completed about $300MM annually.

Team:
B. Peel was project executive; with Pinnacle for 30 years.
J. Sebastian was senior project manager; with Pinnacle less than a year, 25+ years experience.
D. Light was corporate safety manager; with Pinnacle 10+ years, 20+ years experience.
R. Scrabble was general superintendent; with Pinnacle for 20+ years.
S. Shepard was field engineer; with Pinnacle for about 5 years.
T. Nodal was project manager; with B.U.F. for 20 years or more.
R. Thick was field manager; with B.U.F. for 20 years or more.

Case:

The sitework contractor B.U.F. completed nearly all of Pinnacles' site contracts. T. Nodal did paperwork, billing, and change order (CO) processing. R. Thick managed field crews and the work.

J. Sebastian continually requested R. Scrabble to have B.U.F. perform required duties, such as clean up, etc. B.U.F. completed the requests sometimes, but continually not attend weekly subcontractor coordination meetings.

J. Sebastian noticed D. Light and R. Scrabble are very friendly with both T. Nodal and R. Thick of B.U.F. One day in his office, D. Light mentioned he is a paid consultant for B.U.F. Surprised to hear this, J. Sebastian found out other Pinnacle managers were aware of this conflict of interest. Pinnacle had a written policy against employees consulting for subcontractors. He suspected the president of Pinnacle was aware of D. Light being a paid consultant to B.U.F. Following Pinnacle being paid for the month, B.U.F. would always demand payment by calling B. Peel; he would then request processing immediately. B.U.F. usually was paid much earlier than all other subcontractors.

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Early on, B.U.F. struck a live overhead electric service line. It didn't get ripped down, but did break the guy wire wrapped around horizontally servicing meter. J. Sebastian requested D. Light process a near miss report. After repeated requests, D. Light provided a near miss report form that must have been downloaded from the internet that day. J. Sebastian met on site with D. Light and they completed the near miss report at his insistence.

R. Thick of B.U.F. was on site and watched them write it and mocks the process. J. Sebastian signed a copy of the report. Over the course of the next year, the near miss report was never filed or saved in any of the project safety files. B.U.F. went on to strike an underground 2-inch water line months later at the public works building, knocking out service. B.U.F. then knocked down an overhead communications line to the same building. The public works did not have internet or communications for at least two weeks.

Instructor Information:

S. Shepard was a 29-year old project engineer who did not know how to process submittals, write RFIs, or write meeting minutes upon beginning on the project. J. Sebastian had been training this civil engineer previously employed as a soil tester. He asked S. Shepard what he thought from time to time. He responded once, "I'd be pissed if I was the town with what is going on here".

J. Sebastian would eventually leave Pinnacle after about 2 years. S. Shepard left Pinnacle soon after him. The town declared Pinnacle to be in default of their contract in February four years after breaking ground, as the project was not complete. The project was supposed to be complete two years prior.

Discussion Items/Questions for Students:

1. Read the case to understand the issues and challenges. Identify these.
2. Identify issues in this case involving ethics in the decisions made.
3. What information is important to inform decisions by those involved?
4. Research the issues presented in this case. Identify related issues in other situations from the press, government releases, and research. What guides can be obtained from laws, policies, codes of conduct of similar type companies, conflicts of interest, etc?
5. What were the implications for individuals, larger project, and company?
6. What were the responsibilities of each individual team member on the project? To what extent were these being fulfilled?
7. Evaluate and weigh the alternative courses of action and the decisions each individual could have made in processing and signing documents.
   A. Then list the individual positions.
   B. What further actions could individuals have made related to this case, have better outcomes, and avoid issues again?
8. What ethical framework guided your analysis? Why?

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Covid-19 Site Visit

Subjects:

Company Policy, Construction, Covid-19, Decision Making, Design-Build Contractor, Ethics, Public, Safety.

Decision Makers:

As-Built Manager, Project Manager, Safety Manager.

Background:

This project was building a new communications system for a major city agency. Coolidge Group managed a $220MM infrastructure project which included construction of 37 communication towers with shelters of electrical equipment and generators to support communication among the city's transportation system. Shelters mostly consisted of two individual rooms; about 8 feet by 10 feet in size, with equipment taking up most of the area.

The country was in a pandemic and covid-19 began to spread in February 2020 throughout the United States. It was January 2022 and recent surges including the Omicron variant have re-emerged. The vaccine to battle against the virus had been identified effective and majority of U.S. citizens had taken it, but not all. A meeting on As-Built drawings occurred at one of the 37 project sites among four individuals associated with the project; one individual was from a different company Einhorn Group. Einhorn was the owners' representative. At least one was not vaccinated. J. Mary was vaccinated. The city agency required masks to be worn on project sites.

Team:

Z. Obs was managing As-Built process; 13+ years with Coolidge, 38 years old.
A. Brass was QC engineer; contractor with Coolidge for less than a year, 30 years old.
S. Carr was safety representative; contractor with Coolidge for less than a year, 40 years old.
J. Mary was senior construction manager, less than 1 year with Coolidge, 52 years old.
N. Nunez was managing As-Built process with Einhorn, 63 years old.

Case:

J. Mary arrived on project site in the morning. He noticed two individuals sitting in their cars outside of this busy city residential neighborhood street. J. Mary put on his personal protective equipment (PPE) and walked toward the project site. S. Carr got out of his car and asked him to sign two required forms; a daily safety briefing and a covid-19 symptom checker noting no symptoms. S. Carr also requested J. Mary's vaccination card which he showed.

S. Carr was Z. Obs supervisor; he was previously notified from Coolidge human resources (HR) that Z. Obs was not vaccinated filing a religious exemption. S. Carr noticed Z. Obs had never come to the Coolidge main office in the middle of the city, although requested to do so by multiple Coolidge managers at different times over the last four months.

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J. Mary walked around the shelter taking pictures of the shelter and transmission antenna; identifying incomplete work. At this point, A. Brass got out of his car and entered shelter. J. Mary then entered the shelter room where other team members were. Taking pictures of equipment inside the tight quarters, J. Mary noticed all four individuals in the room. Z. Obs and N. Nunez were side by side looking and marking up As-Built drawings.

J. Mary had a similar experience in the midtown Coolidge offices involving a similar issue. An individual had come into the office for an interview organized by others. During the interview in a small office, the individual had indicated he was not vaccinated. No prior covid-19 testing was performed on the individual prior to the interview.

Instructor Information:

Covid-19 broke out in this region of the country during the beginning of virus. The area experienced great loss of life. Organizations struggled with dealing with the rights of vaccinated and unvaccinated workers. Upon visiting multiple project sites, J. Mary noticed each safety representative had different criteria for visitors; some requested vaccination cards, but some did not. Masks were worn on some projects, but not all, even though an agency requirement. Even when masks were worn, individuals would adjust them while talking and wear them incorrectly at times. J. Mary noticed the individuals wearing masks during this site visit.

Discussion Items/Questions for Students:

1. Read the case to understand the issues and challenges. Identify these.
2. Identify issues in this case involving ethics in the decisions made.
3. Explain if you feel members of the team had a right to know if they are in a tight area with an unvaccinated individual? Does your explanation differ based on age?
4. Research the issues presented in this case. Identify related issues in other situations from the press, government releases. What guides can be obtained from laws/policies, codes of conduct of similar type companies, professional codes of ethics, etc.
5. What would you do if you were Z. Obs? Explain if you feel he had an obligation to inform N. Nunez?
6. Answer the questions above for employees who work for the same organization, or for two different companies. Discuss the differences, if any.
7. What were the responsibilities of each individual team member on the project? To what extent were the responsibilities fulfilled?
8. What ethical framework guided your analysis? Why?
9. Prepare the presentation of the case as directed (written summary, role play, group discussion, etc.) Consider if an individual was diagnosed with covid-19 following this interaction, how could the company or city agency be liable?

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International Culture

Subjects:

Construction, Culture, Decision Making, Ethics, General Contractor, International, Personal Relationships, Procurement.

Decision Makers:

Project Manager, Owner of subcontracting firm.

Background:

Reed International was a subsidiary of Reed Construction which had over 10,000 employees. W. Johns had been sent overseas to manage the procurement of Bull's trading floor and office in this large cosmopolitan city. Bull was a large investment firm leasing offices in the Dooang office building that is 6 years old. This was his first international assignment and he was excited. Hanwah was the designer and construction company that had performed all of Bull's construction work previously. W. Johns was assigned a translator who was also the office manager. Bull's assistant director was assigned to manage the construction.

Case:

In this country, it was customary for the designer to also be the contractor for construction projects. W. Johns had two responsibilities on this assignment; manage the renovation of the new heating, ventilation, and cooling (HVAC) changes. and also manage the bid process for the office and trading floor renovation. Bull hired Reed to manage the tender process in a competitive bid modeled after U.S. methods.

He arrived in this city in Asia and immediately began finding cost savings for the project. Hanwah is the organization that had designed an HVAC renovation involving installing new air conditioning units on the roof and all new ductwork through chases to Bull's offices and trading floor; valued over $1MM U.S. dollars. Realizing this building was only 6 years old, something didn't make sense. Within a week of arrival, he pinpointed an issue where Bull's existing perimeter air conditioning units were not being maintained properly; filters were not being cleaned. This resulted in the entire HVAC renovation being unnecessary. The maintenance staff were embarrassed, but the solution was much better than the planned work. W. Johns gained trust and admiration from Bull's director as a result of this.

Known as a tender process, he managed the procurement process for Bull's office and trading floor renovation. He made friends with personnel as he was in country by himself living in the Bestin hotel six blocks away. He learned from employees the owner of Hanwah was best friends with the assistant director of Bull's country office; each of these women had graduated high school together.

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Identical bidding documents were distributed to all three bidders. W. Johns managed a sealed bid tender process that included Bull personnel in the room opening sealed bid envelopes and signing the resulting bid proposals.

Hanwah wound up being the second bidder following leveling the bids. Hanwah's president was very disappointed in the result, as was the assistant director. The winner of the project stated to him following the award and contract signing, "You have done a very big thing here awarding the project to our company; Hanwah has done all prior work for Bull for years".

Although Bull's director was happy with the result, The office manager who was his translator was not, she too had a relationship with the president of Hanwah.

Instructor Information:

Following the award to a different company, the president of Hanwah called W. Johns and stated the following. He documented the conversation to his supervisor and Bull's U.S. director of construction.

Noting her disappointment in the award, the president noted Hanwah completed over 40 Million Won which equated to $32,000,000 USD worth of work. She noted she was going to call Bull's U.S. construction director's office representative also.

A. Bull's director was an evil person.
B. She was going to divulge information of the director's corrupt practices to higher Bull personnel, to change minds.
C. She felt the winning bidder bribed Bull's director.
D. The director was bought by the winning bidder.
E. Bull's director is excluded from certain financial societies due to his corrupt practices and reputation.

Construction progressed very well on the project with the winning bidder. W. John's relationship with the office manager and assistant director was not as strong.

Discussion Items/Questions for Students:

1. Read the case to understand the issues and challenges. Identify these.
2. Identify issues involving ethics in the decisions made.
3. Explain if you feel Bull's U.S. procurement rules and policies should be followed internationally. Why, or why not?
4. Explain if W. John's did the right thing in this situation and if you would do the same?
5. Research the issues presented in this case. Identify related issues in other situations from the press, government releases, and other research. What guides can be obtained from laws/policies, codes of conduct of similar companies, professional codes of ethics, etc.?
6. What were the implications of the issues in this case for W. John's career, Reed, and Bull?
7. What were the responsibilities of each individual team member? To what extent were the responsibilities fulfilled?
8. What ethical framework guided your analysis? Why?

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APPENDIX E3: EXAMPLE CASE STUDY

Procurement Credits

Background:

Big Ted Construction is a very large construction company that has centralized procurement. Centralized procurement is a method of writing construction subcontracts and agreements in main office, rather than in field by the project staff. Don McCoy is a procurement agent who writes contracts to subcontractors. Don reports to Barry Dea who is the procurement manager. The procurement office for this established construction company manages award of approximately $500 million in subcontracts annually. Lump sum hard bid (rip and read), guaranteed maximum price (GMP), cost-plus a set fee are some of the contract models that Big Ted construction manages. Subcontractors bid to Big Ted as general contractor or construction manager. Big Ted assembles subcontractor bids and submits a bid to a public or private entity that make decisions on what companies will build projects for them. Big Ted has been in business for over 100 years and prides itself on reputation.

Very large construction company office
Labor market: Closed shop (Union labor)
Company is over 5,000 employees

Team:

Big Ted
General Manager: Dominick O'Connor, 20+ years with Big Ted.
Executive Assistant to the General Manager: Ana Denunzio, 15+ years with Big Ted.
Procurement Manager: Barry Dea, 10+ years with Big Ted, 11 years of experience.
Procurement Agent: Don McCoy, 5+ years with Big Ted, 10 years of experience.
Procurement Agent: Mo Donnelly, 2+ for Big Ted, 4 years of experience.
Estimator: Devin Munoz, 1+ year for Big Ted, 9 years of experience.
Procurement Administrator: Anita Field, 18+ years for Big Ted, 20 years of experience.
Crimson Painting
Subcontractor Principal: Vito King, 38+ years of experience.

Cost/Schedule/Other Information:

Responsibilities = Award subcontracts on construction projects.
Don McCoy is currently a procurement agent who writes about $200 million in subcontracts annually. This is one of the larger offices throughout the United States.

Case:

Don McCoy is one of two procurement agents who report to Barry Dea. Big Ted's reputation is strong. Many educational, financial, media, medical, industrial, and communication organizations hire Big Ted to build and manage projects. Don's experience in procurement is about two years. Big Ted has been awarded a large renovation project valued at about $150 million for a financial organization Don is responsible to procure(buyout the subcontracts). The financial company is Bamberg. The contract type is a guaranteed maximum price(GMP). The

owner trusts Big Ted and there is a lot of extra money in the budget, $10,000,000's more than the project needs. Big Ted has done a number of projects over the years with Bamberg.

Don is currently procuring two other projects; one is a GMP and the other lump sum. The lump sum is a $35,000,000 children's hospital called Crivers Hospital that is not-for-profit. This children's hospital was a lump sum bid where Big Ted left a lot of money on the table. Meaning, Big Ted's bid was about $4 million less than the next lowest bidder. The entire estimating staff and management staff are aware of the financial risk issues with the Crivers hospital project.

Estimating and procurement work hand in hand prior to the bid day to submit a cost for the project. Once the contract is awarded to Big Ted by Bamberg, the responsibilities to procure the project are with transferred. The project's bid box includes all of the estimating sheets and physically gets transferred from estimating to procurement. Don keeps a procurement schedule where he lists budgeted amounts the estimating department included in the bid, as well as date of planned award, and priority for awarding. The budget values are passed over to the procurement department from estimating.

Barry holds a weekly buyout meeting with the two procurement agents. Barry likes to hold the meeting on Monday morning to plan the week ahead. In this meeting, the following conversation occurs.

Barry: "Let's see the procurement schedules for the projects that you guys are working on".
Don: "Here are my current schedules for the Bamberg project, as well as Crivers".
Mo: "Here are my current schedules for the smaller interior projects that I am buying out".
Barry: "Don, you know we talked about the issues with the Crivers hospital project and you may need to do some combination (combo) buys as a result".
Don: "I know".
Barry: "I also need those political contributions we talked about from both of you. Let me know when all of those checks are coming in. Dominick O'Connor asked me about them this morning".
Mo: "I'm getting mine, I am almost to my goal".
Don: "Me too".
Barry: "There should be enough money in both of your projects to cover the costs. Don, I know you have enough, that's for sure".

Barry then distributes a hardcopy "Buyout Credit" spreadsheet he maintains to Don and Mo in the meeting. The spreadsheet includes subcontractor names and values of credits that he has with each of these subcontractors. The values of each subcontractor credit are from $10,000 to $300,000 each. The total on the bottom of the spreadsheet is about $2,000,000. These values represent money Big Ted included in prior awards for use in the future.
Barry: "The credits are good, but we need to use the Bamberg project to increase the amounts".
Don: "Got it".

The meeting ends and each of the procurement agents and manager go to their offices. The next day Barry comes into Don's office. Barry goes over two packages with Don in reference to the combo buys discussed previously.
Don: "Let me get the sheets from the printer".
Don grabs the sheets from the printer next to Anita. Anita sits outside of Don and Barry's offices.

The following conversation occurs.
Barry: "Don, you know we have the largest issues with the budget numbers for steel and painting on the Crivers hospital project".
Don: "Yes".
Barry: "We'll need to do a combo buy, so award the steel to Harper Steel for both projects and cover the loss at Crivers with the excess budget money we have on Bamberg. Let me see the leveling sheets." Don nods in agreement.
Barry: "Harper's numbers aren't that much higher than Ceaser Steel, so make it work. Also, for painting, Dominick wants to give the Bamberg project to Crimson. They lost their ass on the stadium project and we need to make it up to them. Steel and painting are the biggest voids we have to fill on Crivers. Estimating really missed the mark on the intumescent issue. We have similar budget issues on that package for Crivers, so do a combo buy with painting too. Get the numbers and leveling sheets together and we'll go over them before you pull the trigger".
Don: "OK".
Barry gets up and walks out of Don's office. Barry walks back to Don's doorway and says.
Barry: "Oh yeah, I almost forgot, Dominick is attending that politicians' event Friday night, he needs $20,000; all individual checks not valued over $2,300 each, like last time. I'll need them by noon Friday".
Don: "OK, I'll get them".
Early Thursday morning, Barry asks Don to come into his office. Barry and Don are both early birds.
Don: "Good morning Barry".
Barry: "Good morning Don. It's Wednesday, do you have the leveling sheets complete?".
Don: "Yes". Don hands two 11" by 17" spreadsheets to Barry.
Barry: "Steel on Crivers is a $60,000 issue. We have an extra $150,000 in Bamberg's budget number. Write a contract to Harper Steel for $28,400,000 and show a savings of $10,000 about- don't make the numbers that even…you know that. On Crivers, that will leave us with about $90,000 savings to show to Bamberg. On to painting, let me take a look."
Barry: "I cannot understand how Devin missed the intumescent on the steel". Barry puts down the steel leveling sheet and reviews painting. Anita comes in and sits at her desk and says good morning to both of them in Barry's office.
Barry: "Crivers painting has a $220,000 bust. Move $210,000 to Crivers from Bamberg, and do a combo buy for…"
Barry does some calculator entry.
Barry: "A combination contract to Crimson for $4,200,000 for both projects, including the intumescent issue. This will also include the $720,000 that Crimson lost on the stadium. The Crivers budget for painting will show about a $7,000 loss but that's OK, we'll tell them we had a bust and that Big Ted will suck that one up for the hospital".
Don: "OK, sounds good".
Don gets up and begins to leave and then turns around.
Don: "Barry, I got the checks coming in for the event Friday night too. I hid the money in the concrete buy for Big Bank".
Barry: "Don't say hide, you "buried" it".
Don: "You got it, Sorry".
Barry: "Good job".

Anita says “It sound like you guys are busy early today” to Don as he passes her on the way to his office. Don responds “Yes”.
Later that Thursday afternoon. Vito King from Crimson Painting comes into Big Ted offices. Don meets Vito in the office lobby and walks with him to his office. Vito passes by Anita and say hello as he walks in to Don’s office. Don closes the door and they sit and talk.
Don: “Congratulations on the Bamberg project, Anita is drawing up the subcontract. We’ll sign it next week”.
Vito: “Great, the stadium really set us back”.
Don: “I know”.
Vito hands Don an envelope with 3 personal checks in it, each under $2,300 in value made out to a politician as a campaign contribution. Don receives the envelope and puts it in his desk drawer.
Don: “Thank you Vito”.
Vito: “Thank you Don. Are you going to game 3? The Sprockets are going to take it in 5.”
Don: “Don’t know, tickets are about $600 each on teletix.com”.
Vito: “Here are two tickets including the V.I.P. club before the game”, as Vito hands Don a second envelope.
Don: “Thank you Vito”.
Don and Vito stand up and Don opens the door and leads Vito out of his office. Vito smiles at Anita and says “Have a nice day”.
Anita: “You too Vito, nice to see you again”.
Vito: “Nice to see you too”.
It is Friday morning and Ana knocks on Don’s door early.
Ana: “Good morning Don, Barry told me last night that you would have the checks”.
Don: “Yes, here they are”.
Ana: “Thank you, Dominick’s got to leave at noon today, so he needs them for tonight. It is black tie and he’s got a meeting at 3PM”.
Don: “Thank you Ana, have a good weekend”.
Ana: “You too Don”.

Don writes up the subcontracts for steel and painting with the awards for both the Bamberg project and Crivers hospital going to Harper Steel and Crimson Painting respectively. Don coordinates with Anita to have the principals of each company come in early next week to sign and initial the contracts.

Supplemental Information:
A leveling sheet has a bid number on the top and scope listed on the left-hand side. As a subcontractor is scoped out, there may be something that the contractor has omitted from their bid to get a complete scope. A procurement agent may add numbers to base bid number submitted by the subcontractor in an effort to level or balance the bids received from all subcontractors. The leveling means that the numbers at the bottom of a scope sheet should include all equal scopes of work. On private projects, leveling sheets do not need to be made public. On public projects, they may have to be. Especially major trade purchases over a certain value.
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Discussion Items/Questions for Students:

1. Read the case to understand the issues, challenges, and constraints.
2. Identify issues in this case involving ethics in the decisions made/to be made.
3. What information is important to inform decisions of those involved?
4. Research the issues presented in this case. Identify related issues in other situations from the press, government releases, and other research. What guides can be obtained from laws/policies, codes of conduct of similar companies, professional codes of ethics, etc.?
5. What are the percentages of values identified? What may this be indicating?
6. What are the implications of the issues in this case for the larger project? The company? The individuals? The industry?
7. What are the responsibilities of each individual team member in the office? To what extent were the responsibilities fulfilled?
8. Evaluate and weigh the alternative courses of action and the decisions each individual made in processing/signing/changing _____.
   A. Then list the individual positions
   B. What further actions could _____make related to this issue/have better outcomes/avoid the issue again?
9. What ethical framework guided your analysis? Why?
10. If done as a team, what is the basis for different decisions?
11. Prepare the presentation of the case as directed (written summary, role play, group discussion, etc.)

Subjects included:

Ethics, political contributions, overbilling, procurement, fraud.

Instructors Information:

The research from students may include the following articles. Pattern matching and common themes should be identified. A topic that could be identified is systemic ethical transgressions. Also, a topic that could be pattern matched is that of large construction companies identifying potential systemic fraud as being by a few rogue employees who skirted company policy against the code of conduct and without upper management being aware.

Keywords: Bribery, kickbacks, bid-rigging, executives, pay to play, cheat, corrupt, isolated group of rogue employees, overpaid, raids, scheme, embezzle, inflate.

Investigators Eye Possible $100 Million Construction Fraud (2018).
https://www.nytimes.com/2018/02/26/nyregion/bloomberg-interior-construction-fraud.html
The anatomy of construction corruption (2018)
How bribery and overbilling schemes have become commonplace in the world of real estate's middlemen.
https://therealdeal.com/issues_articles/the-anatomy-of-construction-corruption/
Plaza Construction Charged with Fraud (2016)
Will Pay More Than $9 Million in Restitution and Penalties for Defrauding Clients in A Thirteen-Year Overbilling Scheme
Projects Included the Empire State Building, Brooklyn Navy Yard, Bronx Terminal Market, Federal Reserve Bank of New York, and New York University
https://www.justice.gov/usao-edny/pr/plaza-construction-charged-fraud
Tishman Construction Charged with Fraud; To Pay More Than $20 Million in Restitution and Penalties for Defrauding Clients in a Ten-Year Overbilling Scheme (2015)
Projects Included the World Trade Center Towers, the Plaza Hotel Renovation, the Javits Convention Center Expansion and Renovation Project, and the Aqueduct Casino
https://www.justice.gov/usao-edny/pr/tishman-construction-charged-fraud-pay-more-20-million-restitution-and-penalties
Hunter Roberts Construction to Pay More Than $7 Million in Penalties and Restitution for Engaging in a Fraudulent Overbilling Scheme (2015)
https://www.justice.gov/usao-edny/pr/hunter-roberts-construction-pay-more-7-million-penalties-and-restitution-engaging
Non-prosecution agreement between Hunter-Roberts Construction Group, LLC and the United States Attorney's Office for the Eastern District of New York (2015)
https://www.justice.gov/usao-edny/file/771651/download
Building Firm Pleads Guilty to Defrauding Its Customers (2014).
https://www.nytimes.com/2014/05/01/nyregion/structure-tone-admits-to-stealing-tens-of-millions-from-clients.html
Construction Giant Lend Lease (Bovis) Charged with Defrauding Clients in Three Separate Schemes and Will Pay Over $50 Million and Institute Comprehensive Reforms (2012).

- Former Principal in Charge of Bovis' New York Office Pleads Guilty to Fraud Charge, Faces up to 20 Years in Prison.

https://archives.fbi.gov/archives/newyork/press-releases/2012/construction-giant-lend-lease-bovis-charged-with-defrauding-clients-in-three-separate-schemes-and-will-pay-over-50-million-and-institute-comprehensive-reforms
City's Construction Giants Face Criminal Probe for Billing Fraud (2012).
https://www.wnyc.org/story/226020-citys-construction-giants-face-criminal-probe-billing-fraud/

Mirsky, R. & Schaufelberger, J. (2015). *Professional Ethics for the Construction Industry*. New York, NY: Routledge.
"Unfortunately, some of our employer companies have also "institutionalized" questionable practices that confront our graduates when they enter the workplace" p. vii.

APPENDIX E4: EXAMPLE CASE STUDY

Illegitimate Costs included in Proposed Change Order (PCO) ESPA

Background:

This project was at a federal government facility. The ESPA individual infrastructure project valued at $750,000 is one of three under this firm fixed price contract. Although the smallest in dollar amount of the 3, ESPA is most critical as it feeds heated water to the entire mechanical system of $1BB program. E.X. Geary is the mechanical and plumbing subcontractor. In business for over 100 years, E.X Geary is a savvy subcontractor that has done a great deal of government work.

Joe Ada was a senior project manager who signed a "short term assignment" letter lasting from late April through March of following year. The letter signed by Human Resources stated "It is presently anticipated that your assignment will begin as of April 25th and last until March 2nd ". "It is anticipated that you will return to (State omitted), your principal place of work, upon completion of this assignment". Joe is the senior project manager for all three of the $22MM firm fixed price projects which include mechanical/electrical/plumbing(MEP) upgrades for a $1BB science and technology program managed by the federal government.

Federal Government Project
Labor market: Closed shop (Union labor)
Company is over 5,000 employees

Team:

Government Facility:
David Kane is the project manager, 5+ years with government, 20+ years experience.
Lola Esteves is the procurement agent, 3 years with government, 3 years experience.
Corey Feldner is the procurement manager, 10+ years with government, 15+ years experience.

General Contractor: Dolan Federal Group
Ankar Begosh is the business development manager, 19 years with Dolan, 20+ years experience.
Ed Damone is the project executive, 13+ years with Dolan, 20+ years experience.
Joe Ada is the senior project manager, Less than 1 year with Dolan, 20+ years experience.
Jamie Taxan is the superintendent, 14 years with Dolan, 15+ years experience.

Cost/Schedule/Other Information:

Value of project = $750,000
Schedule Duration: 114 days
Schedule Start: April
Schedule Completion: August
Design Changes Finalized: July

Responsibilities for all 3 projects: Install mechanical/plumbing/electrical upgrades and also interior renovation of highly technical scientific equipment building.
Responsibilities for ESPA project: Demolition and reinstallation of mechanical systems and equipment.

Case:

This particular project was not an initial focus of the construction team, but quickly became so. The breakdown of the original project costs are as follows, per the schedule of values(SOV).

Total cost = $750,000
- Including General Conditions = $148,680
- Including Project Management and Work Plan = $35,320
- Including ESPA Construction =$566,000
  - Including Preconstruction, Design, and Procurement = $150,000
  - Including Mobilization = $15,000
  - Including Demolition = $81,000
  - Including Construction = $310,000
    - Including Electrical and Finishes* = $24,500
    - Including Controls = $ 5,000
    - Including Commissioning = $5,000
      - *Note the actual work is mechanical with the exception of this item.

In July, major design changes (PCO 01) were being implemented by the owner, basically increasing the amount of piping and equipment for the ESPA project by 50%. E.X. Geary submitted PCO 01 pricing valued at $146,253. Joe Ada reviewed the subcontractor change order request, held a review meeting with only the subcontractor first, then with the client, and performed a detailed written analysis. Joe is familiar with reviewing CO requests, including government work. There are certain markups established as accepted by government per published productivity rates, etc. Joe agrees the pricing by E.X. Geary is appropriate, although on the very top end of the allowable markups, still appropriate.

Ed Damone has a discussion with Joe Ada and notes Dolan is going to include general condition markups with this change order request to recoup some of Joe's living and reimbursable expenses. Ed shows Joe the amount he is thinking, which amounts to submitting a total CO request in excess of $500,000. Joe reviews the values and pushes back to Ed noting he(Joe) had always been planned to be on the project for 11 months anyway, so how are any of Joe's living and reimbursable expenses deemed appropriate to include? Ed replies that Dolan did not anticipate the staffing needs for all 3 projects and it is our plan to submit as indicated and recoup some of these costs. Joe pushes back further and states to Ed, "If I am at the conference table and someone from the government asks me if I was originally planning on being here 11 months, I will respond yes".

Joe Ada receives a call from Dolan's business development manager Ankar Begosh the next day. Joe has never received a call from Ankar previously, but has met him. Ankar notes Joe needs to include everybody for reimbursement on change order request, and don't just give the subcontractor cost. Ankar notes that Joe needs to be familiar with the general conditions markups, and understand Dolan is the GC on this project, not construction manager. Ankar notes he's been with Dolan for 19 years and we need to hold the client responsible for design changes

on the ESPA project. Joe replies he understands transparency is important; and the submitted cost is not just the subcontractor cost, but also notes he has to be able to justify the submitted costs. Ankar indicates "As long as you are with us, you need to" understand that our G&A cost of 4% or 5% and a fee of 8% or 9% is not profitable on change orders. Ankar notes the cost of doing business doesn't include his time either. Joe responds he completely understands the costing process. Ankar notes we need to include reimbursable expenses for two project engineers, and the performance of how we do falls on the project manager.

Joe responds for Dolan to include reimbursable at that amount is crazy for the amount of added work. Ankar mentions IDIQ a second time, defined as indefinite deliverable/indefinite quantity and mentions other work we are pursuing at this facility. Ankar notes we need to "maximize margins", and again says "if you are still around with this company". Joe reiterates what he said to Ed in that if he is asked by the client at the conference room table if he was planning on staying here for 11 months, he will respond "yes". Joe remarks to Ankar it will be difficult to justify multiple $100,000s of general conditions for direct work valued at $150,000. Ankar says we will submit the additional living expenses and reimbursable to the client and when the project is audited two years from now, it won't matter, nobody will remember if you were going to be here for 11 months or not. Joe says the client is going to be very unhappy. Ankar notes we are providing the best value to the client. Ankar then states it "doesn't matter what (government facility) opinion is". Ankar and Joe's conversation ends and they say good-bye to one another.

The change order request is submitted. David Kane is a stickler for costs and questioned every single aspect of the subcontractor cost which Joe found acceptable. David and Lola both greatly questioned the Dolan markups in subsequent meetings and state they cannot believe Dolan is requesting markups that exceed the subcontractor cost. The government requests a meeting with Joe and Ed to go over the change order submission status. Corey and other government procurement managers trust Joe and get along with him well. In the late afternoon meeting Joe does most of the talking, he notes of the additional staffing needs for 3 projects vs. 1 project. Corey and the others listen to his explanation. Joe does his best to defend the Dolan markup costs that exceed the subcontractor costs. Ed and Joe leave the meeting and Ed says "nice job" to Joe, as Ed did none of the speaking in the meeting. As Joe enters Dolan's construction trailer offices, Jamie asks Joe "how did it go?". Joe responds as good as it could have. Jamie is aware of Dolan asking for markups greater than the subcontractor costs and has previously noted to Joe privately that is absurd.

The contents of this case study have been included for educational purposes. Any contents including names, values, etc. that are similar to real names, values, etc. are purely coincidental.

Supplemental Information:

Joe agrees the pricing by E.X. Geary is appropriate, although on the very top end of the allowable markups, still appropriate. Often productivity rates result in markups that are high on government extras. A savvy contractor will know what is acceptable and will submit these. In this case, E.X. Geary did not budge from their original submission amount.

Lola issues a "Letter of Concern" in August to Dolan at David's insistence. A letter of concern is a formal memo sent to contractor from government indicating (or warning) the contractor to get their act together for the ESPA project.

There was approximately $17,000 in additional mechanical components included in the change order that were added from the period of time when the change order request was submitted by Dolan to issuance of the CO.

Discussion Items/Questions for Students:

1. Read the case to understand the issues, challenges, and constraints.
2. Identify issues in this case involving ethics in the decisions made/to be made.
3. What information is important to inform decisions by those involved?
4. Research the issues presented in this case. Identify related issues in other situations from the press, government releases, and research. What guides can be obtained from laws/policies, codes of conduct of similar type companies, professional codes of ethics, etc.
5. What is the percentage of general conditions for PCO 01 requested vs. the CO 01 as processed?
6. What are the implications of the issues in this case for the larger project? The company? The individuals?
7. What are the responsibilities of each individual team member on the project? To what extent were the responsibilities fulfilled or not fulfilled?
8. Evaluate and weigh the alternative courses of action and the decisions each individual made in processing/signing/changing _____.
   C. Then list the individual positions
   D. What further actions could _____make related to this issue/have better outcomes/avoid the issue again?
9. What ethical framework guided your analysis? Why?
10. If done as a team, what were the challenges to reach agreement (if it was reached)? If not, what was the basis for different decisions?
11. Prepare the presentation of the case as directed (written summary, role play, group discussion, etc.).
12. What implications do the contents of this case have for future relationships and work that Dolan is considered for at this government facility? Does it matter?

Subjects included:

Ethics, public, claims games, potential fraud.

Instructors Information:

In August Dolan submits a change order request (PCO 01) in the amount of $375,228.

Including $178,253 of mechanical subcontractor costs

Including $32,000 of projected overtime, so a subcontractor value of $146,253.

Including $168,507 for Dolan labor and Dolan other direct costs

Including 160 hours for PX at $30,992
Including 360 hours for SPM at $56,661
Including 10 hours for procurement at $1,364
Including 10 hours for scheduling at $1,433
Including 8 hours for billing clerk at $426
Including 80 hours of QC at $12,071
Including 80 hours of safety at $7,773
Including 160 hours of field engineering at $14,102
Including travel subsistence per diem & lodging for 18 weeks at $16,740
Including rental vehicles for 6 weeks at $1,800

In September, after two revisions, the change order for ESPA PCO 01 is processed by the government at $184,717.

Including no projected overtime, but changing the completion date from August to October with closeout changed from September to December.
Including 24 hours for PX
Including 24 hours for SPM
Including 8 hours for procurement
Including 8 hours for billing clerk
Including 16 hours for field engineer
Including 0 hours for scheduling
Including 0 hours for QC
Including 0 hours for safety
Including no additional funds for subsistence per diem & lodging
Including no additional funds for rental vehicles

The contents of this case study have been included for educational purposes. Any contents including names, values, etc. that are similar to real names, values, etc. are purely coincidental.

APPENDIX E5: CASE STUDY ACRONYM LIST

CLIN: Contract Line Item

CM: Construction Manager

CMR: Construction Management Representative

CO: Change Order

COF: Contracting Officer

COR: Change Order Request

CP: Certified Payroll

DBE: Disadvantaged Business Enterprise

FAR: Federal Acquisition Regulation

GC: General Contractor

GM: General Manager

GMP: Guaranteed Maximum Price

HVAC: Heating/Ventilation/Air Conditioning

MBE: Minority Business Enterprise

MEP: Mechanical/Electrical/Plumbing

PCO: Potential Change Order

PM: Project Manager

SBE: Small Business Enterprise

T&M: Time and Material

WBE: Women-Owned Business Enterprise

APPENDIX F: DESCRIPTIVE STATISTICS OF CM INSTRUCTORS' SURVEY RESPONSES

Descriptive Statistics of CM Instructors' Survey Responses

Survey Items	Statements	n	Minimum	Maximum	Mean	Standard Deviation
Ethical Decision-Making Instruction						
4	Ethical Decision-Making Instruction - Professional role models (colleagues, supervisors, etc.) have a significant effect on students' ethical decision-making development as construction managers.	67	3	5	4.60	0.55
3	Ethical Decision-Making Instruction - I consider it my role to teach students on topics involving ethical decision making in construction.	68	2	5	4.40	0.63
5	Ethical Decision-Making Instruction - As a professional, I consider myself qualified to teach aspects of ethical decision making in construction.	68	2	5	4.35	0.66
8	Ethical Decision-Making Coursework - Ethical decision making is an important aspect of a CM program at an institution.	67	2	5	4.19	0.74
2	Ethical Decision-Making Instruction - Ethical decision-making courses have a significant effect on students' professional development as construction managers.	67	2	5	3.96	0.90
7	Ethical Decision-Making Coursework - At least one introductory ethical decision-making course should be mandatory for all students enrolled in our CM program.	67	1	5	3.46	1.22
6	Ethical Decision-Making Coursework - The content of courses on ethical decision making in our CM program is adequate.	67	1	5	3.13	0.92
9	Ethical Decision-Making Coursework - Students are taught adequately about ethical decision making in classes outside of our CM program.	67	1	5	2.61	0.85
1	Ethical Decision-Making Instruction - Ethics is too personal and subjective to be taught as part of CM education.	68	1	5	1.44	0.82

Case Study Instruction						
10	Case Study Instruction - Case studies are an effective instructional tool.	67	1	5	4.30	0.74
11	Case Study Instruction - I use case studies as an instructional tool.	67	2	5	4.12	0.79
12	Case Study Instruction - I use case studies to teach ethical decision making.	67	1	5	3.84	1.11
13	Case Study Instruction - Case studies to teach ethical decision making are readily available.	67	1	5	2.94	0.95
14	Case Study Instruction - Authentic case studies to teach ethical decision making are readily available.	67	1	5	2.82	1.03
CM Literature Theme Items						
B	How many years have you taught CM courses? Please choose only one.	76	1	5	3.38	1.07
D	Does your CM program require a standalone ethics course for undergraduate graduation?	75	1	2	1.81	0.39
1	Please read the following example from literature including a "systemic" theme: "Despite more attention to illegal and unethical actions in the construction industry, individuals still "cross the line" into questionable areas of business practice - whether due to temptation, market pressure, or greed. "It's really systemic in the industry." says Theresa Carlson, supervisor of the FBI's white collar crime division in Birmingham, Ala. "There is little oversight and accountability"." Engineering News Record, 2005, p. 26). Please indicate if you perceive ethical transgressions to be "systemic" in construction.	67	1	3	1.76	0.70
G	Please indicate criterion you feel most important to be effective in teaching ethical decision making in construction. Please choose only one.	76	1	5	1.75	1.07

H	Please read the following example from literature including an "everyone does it" attitude: "Loretta Lynch, U.S. Attorney for the Eastern District of New York, had a warning for the city's construction industry. The message should be clear to all who are engaged in similar contract billing fraud: You are in our sights, she said. And the defense that "everyone does it" will not be a shield against law enforcement". Construction Giant (name withheld) charged with defrauding clients in three separate schemes and will pay over $50 million and institute comprehensive reforms" (FBI, 2012, p. 3). Please indicate if you perceive construction as having an "everyone does it" or "everybody's doing it" attitude with regard to ethical transgressions.	68	1	3	1.68	0.66
J	Please read findings included in a 2014 survey indentifying construction to have "unique pressures", a theme found in literature: "Rankings of Sources of Pressure by Intensity - Most to least - Adhering to a project timeline - Trying to keep a project on budget - Meeting your personal financial obligations - Ensuring the financial stability & success of your company - Keeping your job - Wanting to make your boss look good - Advancing your career - Committing safety violations - Ignoring wrongdoing you witness - Violating the law. The list above shows specific sources of pressure felt by employees in the construction industry...Importantly, these are not merely pressures to perform - which can arguably be good motivators for employee engagement and high quality. Rather, employees indicated that the above were pressures to compromise their company's standards or the law in order to do their job. In other words, it may well be that the highly-presurized environment that is inherent to the construction industry may be so intense that it leads employees to consider compromising standards." (Ethics Resource Council, 2014, p. 14) Please indicate if you perceive construction as having "unique pressures" leading some managers to make unethical decisions. Yes, No, I don't know.	68	1	3	1.38	0.60
C	Do you have at least 5 years of full-time project management or superintendent experience in construction?	76	1	2	1.29	0.46
E	Does your program include CM instructors teaching ethical decision making directly to students?	76	1	2	1.17	0.38

Pilot Case Study						
15	Please read the following case study example: Cost included in proposed change order - Case study is easily understood by me.	62	2	5	3.90	0.90
18	Pilot CS - Case study is an effective instructional tool to present an ethical decision-making lesson in class.	61	1	5	3.84	0.82
17	Pilot CS - Case study could be improved upon.	60	2	5	3.68	0.62
19	Pilot CS - I would use case study as an instructional tool on ethical decision making to students.	60	1	5	3.63	0.94
16	Pilot CS - Case study would be easily understood by students.	62	1	5	3.29	1.06
Remaining Survey Items						
24	Please indicate the institution where you teach. Please choose only one.	53				
27	Please indicate the state where your primary institution is located.	55				
25	Please indicate the choice best describing your position. Please choose only one.	60				
K	In what geographic region of the United States do you perceive most ethical transgressions in construction take place? Please choose only one.	68				
28	Please indicate if you are open to being contacted to share/discuss ethical decision making in CM and/or using case studies. The researcher welcomes the opportunity.	59				
26	Please indicate your gender.	59				

APPENDIX G: BIBLIOGRAPHY OF SOURCES OF INFORMATION NOT CITED

American Psychological Association. (2020). *Publication manual of the American Psychological Association (7th ed.).* Author. http://doi.org/10.1037/0000165-000

Anderson, S. K., (2015). Morally sensitive professionals. In *D. Mower, P. Vandenberg, & W. Robison (Eds.) Developing Moral Sensitivity* (pp. 188-204). Routledge (Taylor & Francis Group).

Appel, F. (2005). Ethics across the computer science curriculum: privacy modules in an introductory database course. *Science and Engineering Ethics*, *11*(4), 635-644.

Bender, C. (2013). The UBRP ethics retreat: A model for introducing undergraduate researchers to ethics and professional values. *The International Journal of Science in Society*, *4*, 7177.

Betan, E. J., & Stanton, A. L. (1999). Fostering ethical willingness: Integrating emotional and contextual awareness with rational analysis. *Professional Psychology: Research and Practice, 30*(3), 295-301. doi: 10.1037/0735-7028.30.2.295.

Bogdan, R., & Biklen, S. (1998). *Qualitative research for education* (3rd ed.). Allyn & Bacon.

Bok, D. (1987). *Universities and Ethics*. Report to the board of overseers, Harvard University, Retrieved from http://www.philosophy-religion.org/handouts/ethics.htm.

Bucciarelli, L. L. (2007). Ethics and engineering education. *European Journal of Engineering Education, 33*(2), 141-149. doi: 10.1080/03043790801979856

Buckeridge, J. S. (2006). The case for mandatory inclusion of ethics within the zoological sciences curriculum. *Integrative Zoology*, *1*, 44-47.

Butin, D. W. (2010). *The Education dissertation*. Sage.

Carpenter, D. D., Harding, T. S., Sutkus, J. A., & Finelli, C. J., (2014). Assessing the ethical development of civil engineering undergraduates in support of the ASCE body of knowledge. *Journal of Professional Issues in Engineering Education and Practice*, *140*(4).

Census Bureau. (2016). https://www.census.gov/construction/cpi/

Cherryholmes, C. H. (1992). Notes on pragmatism and scientific realism. *Educational Researcher, 21*(6), August-September, 13-17.

Comte-Sponville, A. (2001). *A Small treatise on the great virtues: The Uses of philosophy in everyday life.* Metropolitan.

Cranton, P., Weimer, M., & Hicks, O. (2006). Effectiveness and ethics: Three perspectives. Effectiveness and ethics in educational development. *International Journal for Academic Development*, *3*(2), 107-113. doi: 10.1080/136014498003020.

Creswell, J. W. (2007). *Qualitative inquiry and research design: Choosing among five traditions* (2nd ed.). Sage.

Creswell, J. W. (2008*). Educational research planning, conducting, and evaluating quantitative and qualitative research* (3rd ed.). Pearson, Merrill Prentice Hall.

Cropanzano, R., & Stein, J. H. (2009). Organizational justice and behavioral ethics: Promises and prospects. *Business Ethics Quarterly*, *19*(2), 193-233.

Crotty, M. (1998). *The foundations of social research: Meaning and perspective in the research process.* Sage.

Davis, M. (2004). Teaching ethics across the engineering curriculum. *The Online Ethics Center for Engineering and Science*. Presented at the 2nd Conference on Planning & Development of Education & Scientific Research in the Arab States, At King Fahd University of Petroleum & Minerals Dhahran - Saudi Arabia

Denzin, N. (1970). *The research act: A theoretical introduction to sociological methods*. Aldine.

Denzin, N. K. & Lincoln, Y. S. (Eds.). (2009). *The sage handbook of qualitative research*. Sage.

Department of Justice (DOJ). (2014, April 24). *Former chief investment officer of construction supply company sentenced to 37 months in prison for bank fraud scheme.* Eastern District of New York. U. S. Attorney's Office.

Erickson, F. (1986). *Qualitative methods in research on teaching*. In M. C. Wittrock (Ed.), Handbook of research on teaching (3rd ed.), 119-161. Macmillan.

Ertmer, P. A., & Quinn, J. (2007). *The ID casebook. Case studies in instructional design* (3rd ed.). Merrill Prentice Hall.

Feldhaus, C. R., & Fox, P. L. (2004). Effectiveness of an ethics course delivered in traditional and non-traditional formats. *Science and Engineering Ethics*, *10*(2), 389-400.

Feldhaus, C. R., Wolter, R. M., Hundley, S. P., & Diemer, T. (2006). A Single instrument: engineering and engineering technology students demonstrating competence in ethics and professional standards. *Science and Engineering Ethics*, *12*, 291-311.

Forester-Miller, H., & Rubenstein, R. L. (1992). Group counseling: Ethics and professional issues. In D. Capuzzi & D. R. Gross (Eds.), *Introduction to group counseling* (2nd ed.), pp. 307-323). Love.

Frederick, W. C. (1998). One voice? Or many? A response to Ellen Klein. *Business Ethics Quarterly*, *8,* 575-579.

Gandhi, Mahatma. (1957). *An autobiography. The story of my experiments with truth*. Beacon Press.

Gorowitz, S. (1982). *Doctor's dilemma*. Oxford.

Guba (1990). *The paradigm dialog*. Sage.

Guba, E. G., & Lincoln, Y. S. (1981). *Effective evaluation*. Jossey-Bass.

Guyette, R. & Piotrowski, C. (2008). Preferences for key ethical principles that guide business school students. *Education*, *131*(2), 268-272.

Hall, K. D. (2004). Student development and ownership of ethical and professional standards. *Science and Engineering Ethics*, *10*(2), 383-387.

Harding, T. S., Carpenter, D. D., & Finelli, C. J., (2012). An exploratory investigation of the ethical behavior of engineering undergraduates. *Journal of Engineering Education*, *101*(2), 346-374.

Hart, C. (2011). *Doing a literature review*. *Releasing the social science research imagination.* Sage.

Heckert, J. R. (2000). Engineering ethics education in the USA: Content, pedagogy and curriculum. *European Journal of Engineering Education*, *25* (4), 303.

Heikkero, T. (2008). How to address the volitional dimension of the engineer's social responsibility. *European Journal of Engineering Education*, *33*(2), 161-168. doi:10.1080/03043790801979872.

Henry, W. P. (2009, July). Addressing corruption in our engineering/construction industry. *Leadership and Management in Engineering, 47(1),* 101-102.

Herkert, J. R. (1997). Collaborative learning in engineering ethics. *Science and Engineering Ethics, 3*(4), 447-462.

Herkert J. R. & Banks D. A. (2012). I have seen the future! Ethics, progress, and the grand challenges for engineering. *International Journal of Engineering, Social Justice, and Peace. 1*(2), 109-122.

Heschel, A. J. (1963, January 14). *Religion and Race*. Voices of Democracy. The U. S. Oratory Project. http://voicesofdemocracy.umd.edu/heschel-religion-and-race-speech-text/

Holsapple, M. A., Carpenter, D. D., Sutkus, J. A., Finelli, C. J., & Harding, T. S. (2012). Framing faculty and student discrepancies in engineering ethics education delivery. *Journal of Engineering Education*, *101*(2), 169-186.

Jackson, B. J. (2005). The perceptions of experienced construction practitioners regarding ethical transgressions in the construction industry. *Construction Education and Research*, *1*(2), 112-128.

Johnson, E. P., McGuire, L., & Cooper, B. (2016). Does teaching ethics do any good? *Education + Training*, *58*(4), 439-454.

Kant, I. (2009). *Kant: Groundwork of the metaphysics of morals*. USA: Readaclassic.com. (Original work published prior to 1804).

Kidder, R. M. (1995). *How good people make tough choices: Resolving the dilemmas of ethical living.* Fireside.

Kohlberg, L. (1976). Moral stages and moralization: The cognitive developmental approach. In T. Lickona (Ed.). *Moral development and behavior.* Holt, Rinehart, & Winston), pp. 31-53.

Kohlberg, L. (1984). *The psychology of moral development: The nature and validity of moral stages.* Harper & Row.

Kohlberg, L. A. (1986). A current statement on some theoretical issues. In S. Modgil & C. Modgil (Eds.), *Lawrence Kohlberg: Consensus and controversy* (pp. 485-546). Palmer.

Lincoln, Y. S. (1995). Emerging criteria for quality in qualitative and interpretive research. *Qualitative Inquiry, 1*(3), 275-289.

Lincoln, Y. S. & Guba, E. G. (1985). *Naturalistic inquiry*. Sage.

Lincoln, Y. S. & Guba, E. G. (2000). Paradigmatic controversies, contradictions, and emerging confluences. In N. K. Denzin, Y. S. Lincoln, & E. G. Guba (Eds.), *Handbook of qualitative research* (2nd ed., pp. 163-188). Sage.

Lincoln, Y. S., Lynham, S. A. & Guba, E. G. (2011). *Paradigmatic controversies, contradictions, and emerging confluences, revisited*. Sage.

Magun-Jackson, S. (2004). A psychological model that integrates ethics in engineering education. *Science and Engineering Ethics*, *10*, 219-224.

Mahajan, R., Aruldhas, B. W., Sharma, M, Badyal, D. K., & Singh, T. (2016). Professionalism and ethics: A proposed curriculum for undergraduates. *International Journal of Applied and Basic Medical Research, 6*(3), 157-163.

Manning, K. (1997). Authenticity in constructivist inquiry: Methodological considerations without prescription. *Qualitative Inquiry*, *3*(1), 93-115.

Maxwell, B., Tremblay-Laprise, A., & McGill, M. (2015). A survey of ethics curriculum in Canadian initial teacher education. *McGill Journal of Education*. 50(1).

McDonald, G. M. & Donleavy, G. D. (1995), Objections to the teaching of business ethics, *Journal of Business Ethics,14*(10), 839-853.

McGowan, A. (2011). Teaching science and ethics to undergraduates: A multidisciplinary approach. *Science Engineering Ethics*, *19*(2), 535-543.

McTavish, D. G., & Pirro, E. B. (1990). Contextual content analysis. *Quality and Quantity, 24*, 245-265.

Merriam, S. (1988). *Case study research in education: A qualitative approach.* Jossey-Bass.

Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: A sourcebook for new methods* (2nd ed.). Sage.

Moore, C., Hart, H., Randall, D., & Nichols, S. P. (2006). PRiME: Integrating professional responsibility into the engineering curriculum. *Science and Engineering Ethics*, *12*, 273-289.

Morgan, G. A., Leech, N. L., Gloeckner, G. W., & Barrett, K. C. (2013). *IBM SPSS for introductory statistics. Use and interpretation* (5th ed.). Routledge.

Office of Public Affairs, Department of Justice. (2009, November 17). *President Obama Establishes Interagency Financial Fraud Enforcement Task Force.*

Park, H. J. (1998). Can business ethics be taught?: A new model of business ethics education. *Journal of Business Ethics*, *17,* 965-977.

Parsa, F., & Lankford, W. M. (1999). Students' views of business ethics: An analysis. *Journal of Applied Social Psychology*, *29*(5), 1045-1057.

Pfatteicher, S. K. (2001). Teaching versus preaching: EC2000 and the engineering ethics dilemma. *Journal of Engineering Education, 90*(1), 137-142.

Plante, T. G. (1998). Teaching a course on psychology ethics to undergraduates: An experiential model. *Teaching of Psychology*, *25*(4), 286-287.

Prince, R. H. (2006). Teaching engineering ethics using role-playing in a culturally diverse student group. *Science and Engineering Ethics*, *12*(2), 321-326.

Rath, T. & Conchie, B. (2008). *Strengths Based Leadership.* Gallup Press.

Richardson, L. (2000). Writing: A method of inquiry. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (2nd ed.). Sage.

Roberts, C. M. (2010). *The Dissertation journey.* Sage.

Rosenbaum, M. (Ed.) (1982). *Ethics and values in psychotherapy: A guidebook*. Free Press.

Sands II, K. S. & Simmons, D. R. (2014). Utilizing think-aloud protocols to assess the usability of a test for ethical sensitivity in construction. *Paper presented at the One Hundred and Twenty-First American Society for Engineering Education*. Indianapolis, IN. Paper ID #9827.

Schwandt, T. A. (2007). *The SAGE dictionary of qualitative inquiry* (3rd ed.). Sage.

Singh, A. (1992). Experience-based issues in construction management. *Journal of Professional Issues Engineering Education Practice, 118*(4), 388-402.

Sinha, S. K., Thomas, H. R., & Kulka, J. R. (2005). Integrating ethics into the engineered construction curriculum. *Proceedings of the 2005 American Society for Engineering Education Annual Conference & Exposition.*

Solomon, R. C. (1990). *A passion for justice: Emotions and the origin of the social contract.* Addison-Wesley.

Stadler, H. A. (1986). Making hard choices: Clarifying controversial ethical issues. *Counseling and Human Development, 19,* 1-10.

Strauss, A., & Corbin, J. (1990). *Basics of qualitative research: Grounded theory procedures and techniques.* Sage.

Strauss, A. L. (1987). *Qualitative analysis for social scientists*. Cambridge University Press.

Tavani, H. T. (2002). Applying an interdisciplinary approach to teaching computer ethics. *IEEE Technology and Society Magazine,* Fall, 32-38.

Transparency International. (2004). *Global Corruption Rep. 2004*, http://www.transparency.org/

Trevino, L. K. (1986). Ethical decision making in organizations: A person-situation interactionist model. *Academy of Management Review, 11*(3), 601-617.

Weber, J. (1990). Measuring the impact of teaching ethics to future managers: A review, assessment, and recommendations, *Journal of Business Ethics, 9*(3), 183-190.

Weber, R. P. (1990). *Basic content analysis*. Sage.

Weidman, J. & Coombs, D. (2016). Dodging marshmallows: Simulations to teach ethics. *Technology and Engineering Teacher*, *75*(7)*,* 14-18.

Willis, J. W. (2007). *Foundations of qualitative research. Interpretive and critical approaches.* Sage.

Wynd, W. R. & Mager, J. (1989). The business and society course: Does it change student attitudes? *Journal of Business Ethics, 8*(6), 487-491.

Zaikowski, L. A., & Garrett, J. M. (2004). A three-tiered approach to enhance undergraduate education in bioethics. *BioScience*, *54*(10), 942-949.

APPENDIX H: IRB REVIEW

Colorado State University
Knowledge to Go Places

eProtocol
Office of the Vice President for Research
321 General Services Building - Campus Delivery 2011 eprotocol
TEL: (970) 491-1553

DATE:	March 19, 2021
TO:	Makela, Carole, School of Education Faircloth, Susan, School of Education, Weber, John, School of Education, Clark, Kelli
FROM:	Chromiak, Angie, Compliance Review Assistant Administrator, CSU IRB Exempt
PROTOCOL TITLE:	COMMERCIAL CONSTRUCTION ETHICAL DECISION-MAKING; AUTHENTIC CASE STUDIES
FUNDING SOURCE	None
PROTOCOL NUMBER:	20-10390H
APPROVAL or DETERMINATION PERIOD:	March 19, 2021

NOTICE OF IRB REVIEW FOR HUMAN RESEARCH

Thank you for submitting your application for exempt review to Colorado State University IRB (CSU) (FWA0000647). We appreciate the work you have done on your proposal. The IRB has reviewed your submitted IRB application and all ancillary materials. Upon review, the IRB has determined that the above-entitled project meets the requirements for exemption under the federal regulations 45 CFR 46.101 that govern the protections of human subjects, specifically .

Exempt studies are subject to the ethical principles articulated in The Belmont Report, found at the OHRP Website www.hhs.gov/ohrp/humansubjects/guidance/belmont.html.

Your research must be conducted according to the proposal that was submitted to the IRB. If changes to the approved protocol occur, a revised protocol must be reviewed and approved by the IRB before implementation. For any proposed changes in your research protocol, please submit an amendment to the IRB. Exempt determinations are active for five (5) years. Please be aware that changes to your protocol may change this determination for exemption from 45 CFR 46.101 and may require submission of a new IRB application or other materials to the IRB.

A goal of the IRB is to prevent negative occurrences during any research study. However, despite the best intent, unforeseen circumstances or events may arise during the research. If an unexpected situation or adverse event happens during your investigation, please notify the IRB as soon as possible. We will ask for a complete written explanation of the event and your written response. Other actions also may be required depending on the nature of the event.

Please refer to the protocol number denoted above in all communication or correspondence related to your application and this approval. Should you have additional questions or require clarification of the contents of this letter, please contact the IRB Office. On behalf of the IRB, we wish you success in this scholarly pursuit.

Please direct any questions about the IRB's actions on this project to:

IRB Office - (970) 491-1553; RICRO_IRB@mail.Colostate.edu
Claire Chance, Senior IRB Coordinator - (970) 491-1381; Claire.Chance@Colostate.edu
Tammy Felton-Noyle, Senior IRB Coordinator - (970) 491-1655; Tammy.Felton-Noyle@Colostate.edu

Chromiak, Angie

Initial exempt determination has been granted on March 19, 2021 to recruit with the approved recruitment and consent procedures. The above-referenced research activity has been reviewed and determined to meet exempt review by the Institutional Review Board under exempt §46.104(d)1(i) & 2(i) of the 2018 Requirements. This study has no funding. Approved documents include: IRB Proposal Chapter 3 Study Design and Methodology - Colorado State; IRB Pilot Case Study 1 & 2 - Colorado State; IRB Survey and Data Collection Packet - Colorado State.

eProtocol
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None