



مدیران حرفه‌ای صنعت ساخت (بر اساس سندی از انجمن مدیریت ساخت آمریکا (CMAA))

فصل اول: راهنمای رفتار حرفه‌ای برای مدیران ساخت

بخش دوم: اصول رفتار حرفه‌ای

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What we will learn?

- ☐ Ethics fundamentals
- ☐ Ethical decision
- ☐ Moral obligations
- ☐ Ethical approaches
- ☐ FMI and CMAA Survey
- ☐ Ethical challenges in the construction industry
- ☐ Components of a business ethics and conduct program
- ☐ Construction manager
- ☐ CMAA code of professional conduct
- ☐ CMAA's statement of values

What we will learn?

- ☐ Ethical practice
- ☐ Professional excellence
- ☐ Responsibility to the public
- ☐ Client-centered practice
- ☐ 15 cybersecurity best practices for organizations

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ETHICAL PRACTICE

Introduction

- ☐ A **CM** must be honest, ethical, and act with integrity in **all their relationships**.
- ☐ CMs must
 1. Respect the rights of others,
 2. Have self-respect, and
 3. Make objective decisionsthat are in the **best interests** of their clients, the industry, and the public.
- ☐ CMs do **not violate** any applicable law, statute, or regulation in the performance of their professional services.

What was ethical decision making model?

Ethical decision-making flowchart

Box 2.1 A Framework for Ethical Decision Making

Recognize an Ethical Issue

- 1 Could this decision or situation be damaging to someone or to some group? Does this decision involve a choice between a good and bad alternative, or perhaps between two “goods” or between two “bads”? Does this decision require me to choose “the lesser of two evils”?
- 2 Is this issue about more than what is legal or what is most efficient? If so, how?

Get the Facts

- 3 What are the relevant facts of the case? What facts are not known? Can I learn more about the situation? Do I know enough to make a decision?
- 4 What individuals and groups have an important stake in the outcome? Are some concerns more important? Why?
- 5 What are the options for acting? Have all the relevant persons and groups been consulted? Have I identified creative options?

Evaluate Alternative Actions

- 6 Evaluate the options by asking the following questions:
 - Which option will produce the most good and do the least harm? (The Utilitarian Approach)
 - Which option best respects the rights of all who have a stake? (The Rights Approach)
 - Which option treats people equally or proportionately? (The Justice Approach)
 - Which option best serves the community as a whole, not just some members? (The Common Good Approach)
 - Which option leads me to act as the sort of person I want to be? (The Virtue Approach)

Make a Decision and Test It

- 7 Considering all these approaches, which option best addresses the situation?
- 8 If I told someone I respect—or told a television audience—which option I have chosen, what would they say?

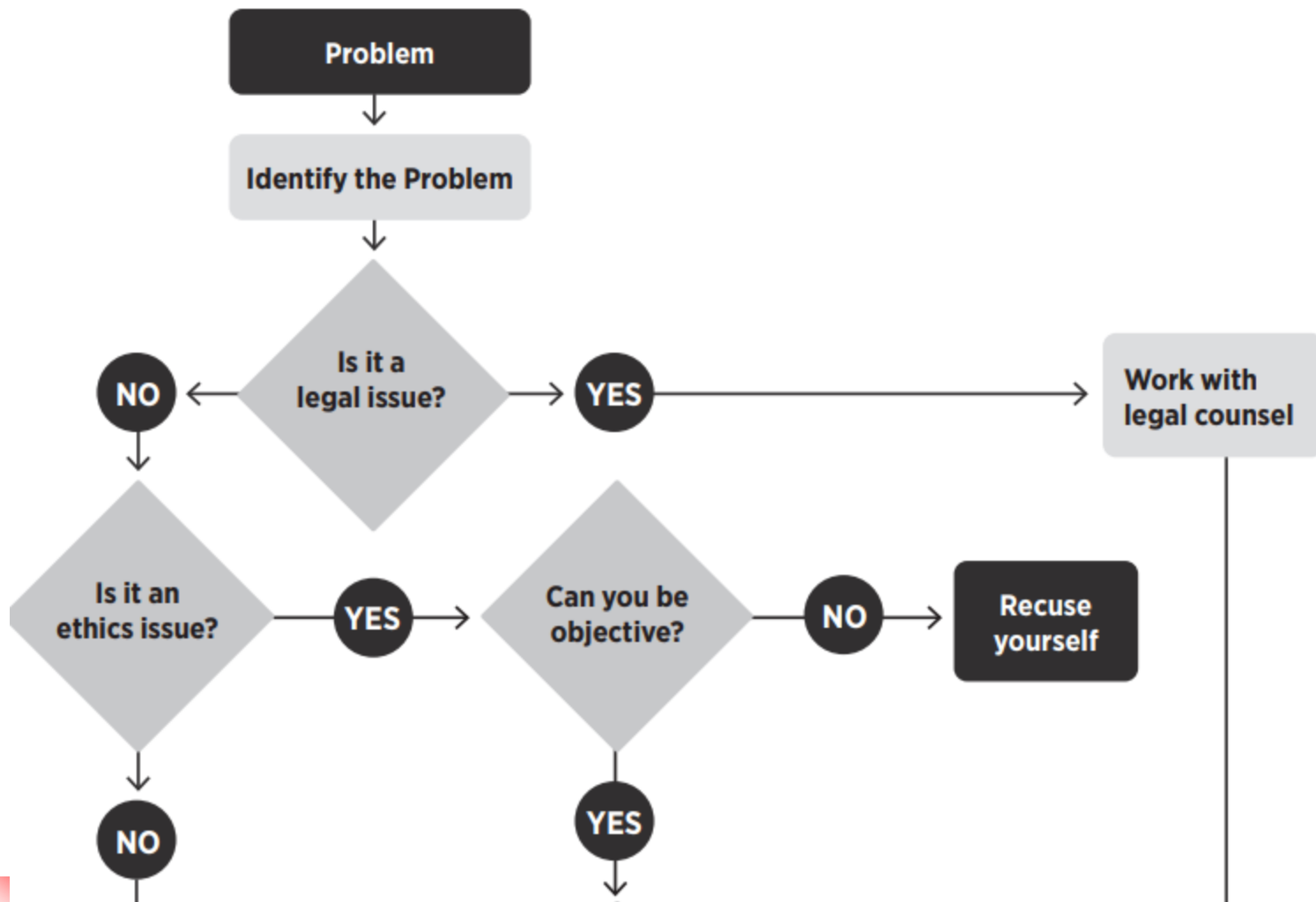
Act and Reflect on the Outcome

- 9 How can my decision be implemented with the greatest care and attention to the concerns of all stakeholders?

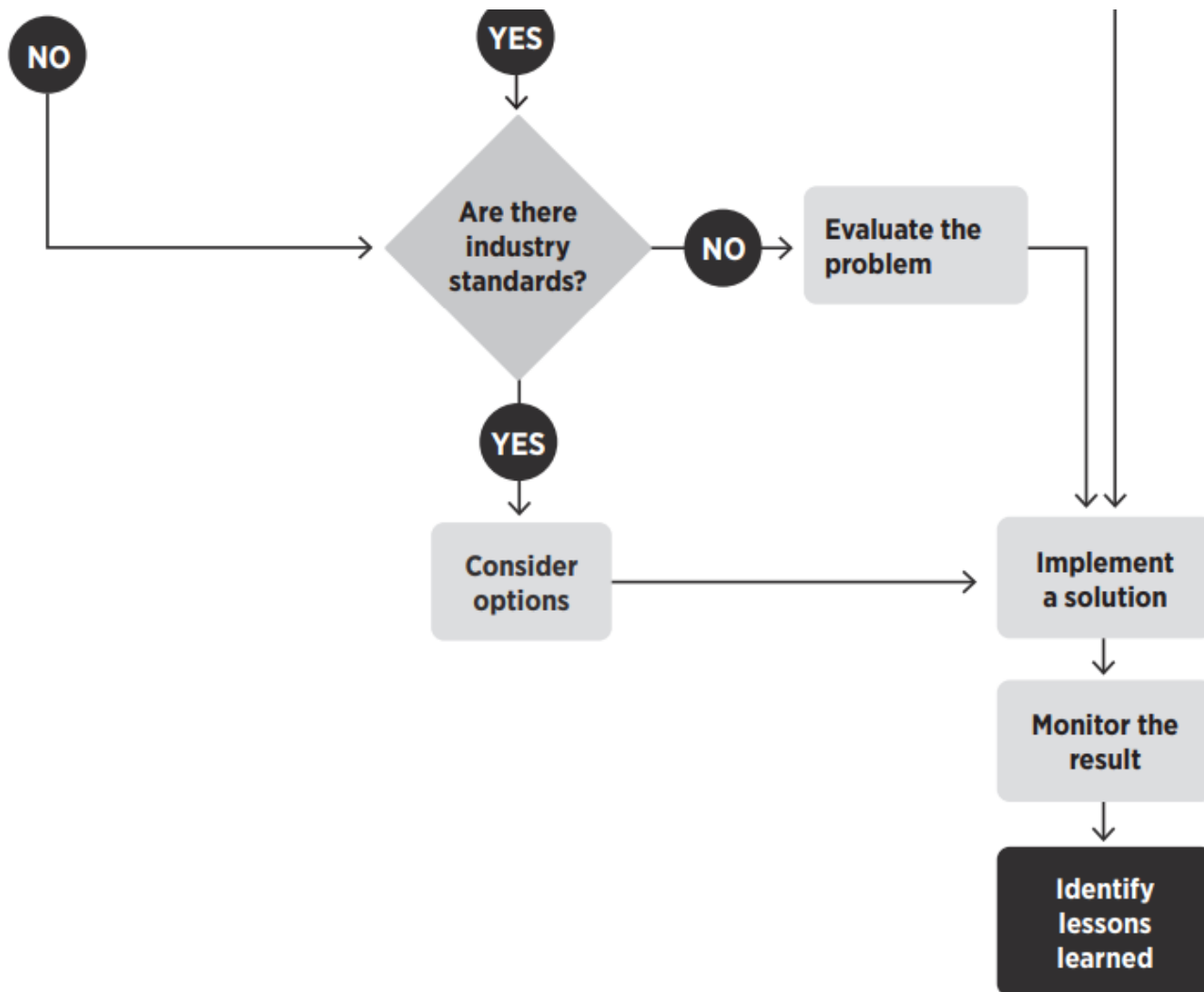
How did my decision turn out and what have I learned from this specific situation?

Source: this framework for thinking ethically is the product of dialogue and debate at the Markkula Center for Applied Ethics at Santa Clara University, August 1, 2015 (used with permission)

Ethical decision-making flowchart



Ethical decision-making flowchart



Ethical decision-making flowchart

- ☐ A CM must remember that **other people (clients, colleagues, etc.)** will judge the CM's **ethics**.
- ☐ When the CM **confronts** an issue, the CM must **competently**
 1. **Identify** the problem,
 2. **Consult** legal counsel (if appropriate), and
 3. **Determine** if there are any industry best practices that address the issue.
- ☐ After **implementing a solution**, a CM should
 1. Monitor the results and
 2. Help the team identify any lessons learned.
- ☐ When it is not possible for the CM to be **objective**, a **conflict of interest** may exist.

Should the CM avoid unethical decision even it is legal?

Ethical decision-making flowchart

- ❑ Note that some ethical dilemmas require CMs

to do **more than simply** meet legal requirements.

❖ In other words, **just because something is legal**
does **not mean** it is always ethical.

- ❑ A CM **must avoid** opportunities to do something unethical,
even if it is **legal**.

Let's see an example!

Ethical decision-making flowchart

- ☐ For example, a **CM might have** a perfectly legal opportunity to
 1. **Manipulate** an owner's procurement process and
 2. **Take** work away from another construction management firm.
- ☐ In this example,
winning a bid by stealing the work could **temporarily help** the CM's bottom line,

but would be **unethical and probably would hurt** the CM's reputation in the industry.
- ☐ The **ethical option** is to compete for the work in a **transparent** and **fair** manner.

Could any conflicts exist here?

Conflict of interest

1. A conflict of interest is

when a person (or an organization) has **goals**
that **compete** with their professional and moral obligations.

2. A perceived conflict of interest is

when a person (or an organization) appears to have **goals**
that **compete** with their professional and moral obligations.

There is another type which is called **potential conflict!**

1. Actual (apparent or real) conflict
2. Potential conflict
3. Perceived conflict

Which one should be avoided?

Conflict of interest

❑ To the **fullest extent possible**, a CM **must avoid**

1. Conflicts of interest or
2. Perception of conflicts of interest.

**CMAA does not talk
about potential but it
may exist!**

**When do we say that there is a conflict
in **construction management**?**

Conflict of interest – Conflicts in construction management

Conflicts in Construction Management

➔ In construction management, the most common conflict of interest is when the CM's interests (or their firm's interests) do not align with the owner's. This misalignment can prevent the CM from fulfilling their most basic role: to help the owner achieve their commitments.

Let's see an example!

Conflict of interest – Conflicts in construction management

- ❑ If the **owner compensates** the CM as a percentage of construction cost, it would create a **conflict of interest** if the CM can **approve unnecessary changes** that increase construction costs.
- ❑ The CM and owner's interests would be **misaligned** because the CM could **increase** their fee with changes the owner does **not need**.

What is the solution?

Conflict of interest – Conflicts in construction management

- ❑ The CM's **contract** with the owner should put procedures in place to **prevent** this conflict, such as **limits on** what the CM can approve.

Let's go to information!

Conflict of interest – Conflicts in construction management

- ❑ A conflict of interest would also exist **if the CM uses** the owner's confidential/proprietary information to **benefit the CM** (or the CM's organization, if separate from the owner) at the owner's expense.
- ❑ **Abusing** this information would go **against the owner's interests**, would be unethical, and may be illegal.

For more, we have a section of "Release of Information."

When the most common perceived conflict of interest happens?

Conflict of interest – Conflicts in construction management

- ❑ Similarly, the **most common** perceived conflict of interest is when the **owner believes** the CM (or their organization) **put their own interests** before the owner's.
- ❑ However, **any stakeholder** may perceive a conflict of interest if the CM **appears** to be in a position that conflicts with the **owner's best interests**.

Why perceived conflict is important?

Conflict of interest – Conflicts in construction management



Perceived conflicts of interest may be unintentional, but they are equally as harmful to the project/program as real conflicts because they can destroy the professional trust between the CM and the owner. If the CM creates a perceived conflict with the owner, the CM may not be able to prove to the owner that no actual conflict exists. This tension can also damage the CM's ability to be objective.

Let's see an example!

Conflict of interest – Conflicts in construction management

- ❑ For example, the **owner** might perceive a conflict of interest if the **CM** withholds negative information about a **bidder** during the procurement phase.
 - ❖ This may **not** be an actual conflict of interest if the **information is irrelevant** to the project.
 - ✓ Nonetheless, the **owner might assume** the **CM** has a **secret motive** and **hide** the information on purpose.
- ❑ A perceived conflict of interest would exist which may be **difficult** for the CM to **disprove**.

Conflict of interest – Conflicts in construction management

- ❑ Note that the **owner may have** real or perceived conflicts

that go against the project's/program's best interests.

- ❖ The CM (or their firm) **must avoid** creating conflicts for the owner.

If the **CM creates** a real or perceived conflict for the owner,
the **owner's conflict** must also become the CM's conflict.

Let's see an example!

Conflict of interest – Conflicts in construction management

- ❑ For example, a **CM at-risk (CMAR)** might **create** a conflict of interest for the owner of a **data center project**
 - if the **CMAR hires** a technology consultant that is one of the **owner's competitors**.
- ❑ The **CMAR** may believe this **consultant** is the most qualified or cost-effective, but this situation might **force the owner** to **decide between**
 1. **Completing** the data center project and
 2. **Risk of exposing** the owner's proprietary information to a competitor.

Now it is time to learn
how to respond to conflict?

Responding to conflicts

❑ Some real and perceived conflicts of interest **are unavoidable**,

so **when** a conflict **appears**,

the **CM (or their firm) must**

1. **Follow** all applicable laws and
2. **“Clear”** it before continuing.

How to clear it?

Responding to conflicts

❑ To clear a **real** or **perceived** conflict,

the **CM** must **first disclose** it to the owner.

❖ **Note** that the CM can **clear many simple conflicts**

by **discussing them honestly** with the owner.

Let's see an example!

Responding to conflicts

- ❑ If the **CM is providing** services to the owner (i.e., not part of the owner's organization),
the **CM usually needs** to
make a profit and charges the owner
at least **slightly more** than the **expenses** the CM incurs.
- ❑ This need exists **whether** the CM is in an agency or at-risk agreement with the owner.
- ❑ A **profit** for the CM's firm is **normal** business practice,
but it **highlights** that the owner and the CM are separate entities with
separate financial interests.

How the CM should clear this conflict?

Responding to conflicts

- ❑ The **CM** can usually clear this conflict by
 1. **Being transparent** about the services they will provide to the owner and
 2. The **fees** they will charge.

Let's see another example!

Responding to conflicts

- ❑ The **CM might plan** to recommend services from a **consultant** with **whom the CM** has a business relationship on another project for a **different owner**.

How should the CM clear this?

Responding to conflicts

❑ Before recommending the consultant,

the CM can usually **clear** the perceived conflict

by honestly disclosing to the owner

that the **CM and consultant** have a business **relationship**.

1. The **consultant** could be the best choice,
2. The **procurement** may be perfectly legal, and
3. The **previous project** may have no influence on the **current project**,
but the CM should **proactively mention** the prior relationship.

**What to do for more
complex conflicts?**

Responding to conflicts

- ❑ For **more complex conflicts**,

the **CM** may also need to **negotiate**

Ways to manage them

which the CM's contract with the owner should **clearly explain**.

- ❑ For example, the **contract documents** might **stipulate**

that the **CM** will **need** the owner's (or another team member's) **approval**

to **make certain decisions**.

Responding to conflicts

- ❑ In severe cases, the **CM** may **need to recuse** themselves from certain decisions.
 - ❖ Recusal is when **someone admits** that they have a conflict of interest and removes themselves from the **decision-making process**
e.g., if the **CM** has a family member who **works for a bidder**,
the **CM**
 1. **Should disclose** the relationship and
 2. **May recuse** himself from the bid evaluation.
 - ❖ The **CM** does **not influence** the process and accepts the **final decision**.

Does it have problem to
be in recuse situation?

Responding to conflicts

- ☐ Note that the CM's best interest is to **proactively avoid situations** that require **their recusal**.
- ☐ When the **CM must repeatedly** recuse themselves from decisions, the owner may wonder why the CM has so **many conflicts** and lose trust in the CM.
- ☐ In a worst case, the owner might think the CM is **too conflicted to deliver value**.
- ☐ Therefore, the **CM should identify** risks that might create a real or perceived conflict as early as possible and **attempt to avoid them**.

Do we need documentation here?

Responding to conflicts

- ☐ Finally, also **note that the CM and owner** must clearly document all
 1. Conflicts,
 2. Disclosures, and
 3. Recusals.

- ☐ This documentation **becomes part of** the project/program record and may be **relevant to future issues**,
such as claims or construction decisions.

What is the role of CM in creating diversity?

Diversity, equity, inclusion, and belonging

❑ A professional CM **strives** to create

- ❖ Diverse,
- ❖ Equitable, and
- ❖ Inclusive

workforce that promotes a **culture of belonging**.

❑ A CM **looks for** ways to

- ❖ Create **career stability** for employees and
- ❖ Advocates for **equitable** and **transparent pay**.

❑ A CM also **takes pride** in the construction management profession and **looks for opportunities** to attract new workers to the industry.

Diversity, equity, inclusion, and belonging



A CM does not discriminate based on race, color, gender identity, marital status, religion, national origin, age, disability, or sexual orientation, or tolerate any form of harassment (including sexual harassment and bullying).

How EQ impacts?

Diversity, equity, inclusion, and belonging

- ❑ However, a CM must make an effort to **be conscious** of their own and their team's personal biases to create a **shared sense of belonging**.
- ❑ Some **verbal comments** and **actions** (**even if unintentional**) can have **harmful impacts** on a team's culture.
 - ❖ Therefore, the **CM leads by example** with sensitivity to the differences among the people on their team (e.g., different cultures, genders, races, religions, etc.) and the humility to admit their **own conscious** and **unconscious bias**.

What is the role of CM in creating culture?

Diversity, equity, inclusion, and belonging

❑ The CM should **create a culture**

1. Where **team members feel empowered** to confront negative comments and actions, and
2. Where **team members admit, apologize** for, and **correct** their **harmful biases**.

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Diversity, equity, inclusion, and belonging

*For more, we will see section related to responsibilities to
the industry, public, and future generations*

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PROFESSIONAL EXCELLENCE

CM scope of work

- ☐ A **CM** should only perform services that they are **qualified** and **able** to offer.
- ☐ A project's or program's scope is **all the owner's requirements** to achieve the finished structure(s),
such as the specific budget, schedule, and quality requirements.
- ☐ The **CM** (and their firm, if separate from the owner) **must have**
resources, knowledge, and experience to meet the owner's requirements.

How the contract could help?

CM scope of work

- ❑ The **contract documents** must also **clearly define**
 1. **CM's scope** of work (i.e., the services the CM will offer) and
 2. **Scope of work** for all other team members.

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CM contribution to the profession

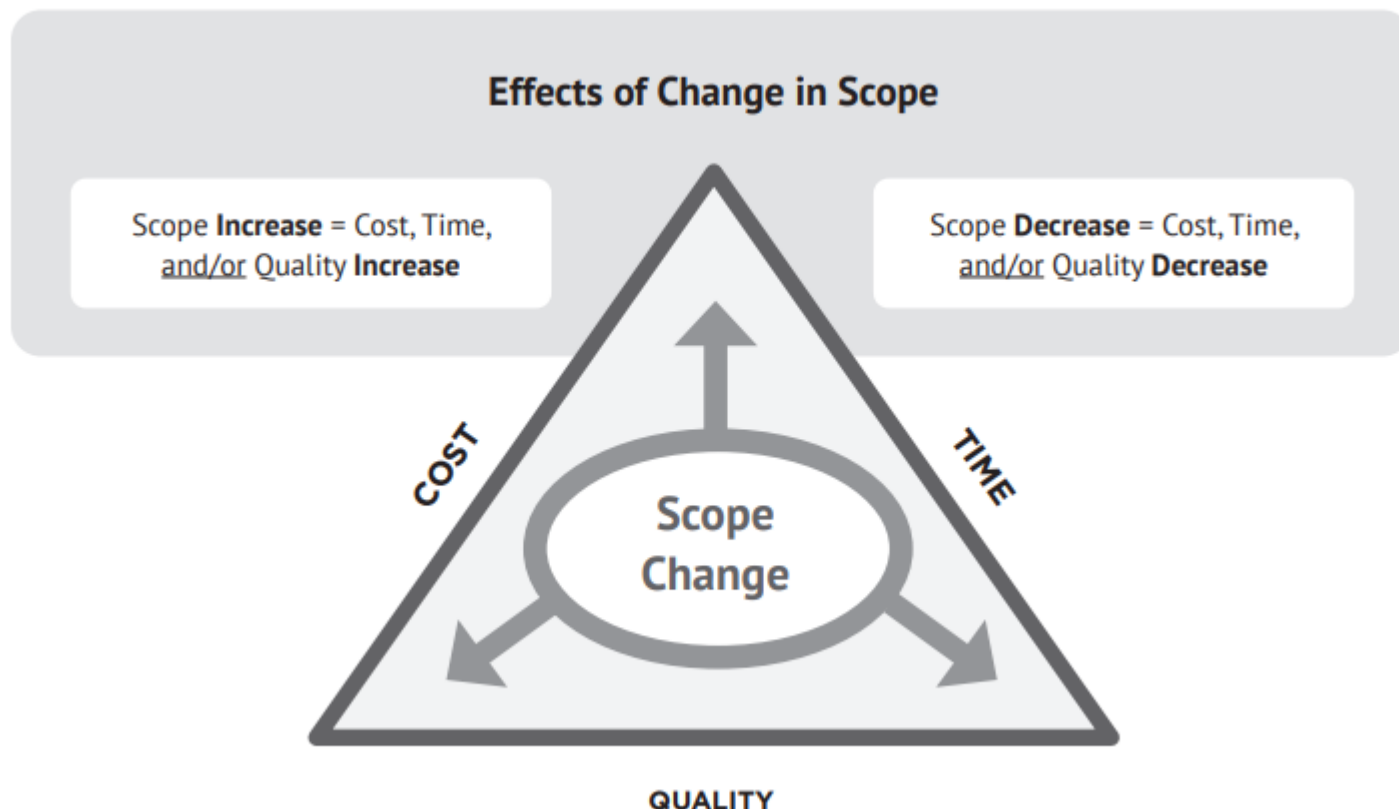
- ❑ CMs should also contribute to the advancement of the profession by
 1. Using best practices,
 2. Continuing their professional education, and
 3. Contributing to the development of the future workforce.
- ❑ A CM follows **best practices** to meet an owner's requirements,
but a **professional CM** also understands that they **must continue their education** to maintain their competency.
- ❑ CMs also understand that the profession will face **future challenges**,
so a CM commits to the **development** of the future workforce,
such as **teaching and mentoring**.

Triple constraint theory

- ❑ All CMs must recognize the relationships among cost, time, quality, and scope.
- ❑ The industry sometimes calls these relationships the **triple constraint theory**, represented by a triangle with pinned corners.
- ❑ An increase or decrease in one side and the lengths of the others may **change as well**.
 - ❖ For example, if an owner decides during the **design phase to increase** the facility's square feet,
the **owner may need to increase** their budget and accept a longer construction schedule.

Triple constraint theory

❑ Effects of Changes in Scope in the Triple Constraint Theory



Triple constraint theory

- ❑ CMs should also **understand** that changes in cost, time, and quality requirements may result in scope changes,
which **pose significant risks** to projects/programs in later phases.
- ❑ **Scope changes** can result in claims and may change the services
that the **CM provides** (or is able to provide) to the owner.

How to achieve scope?

Achieving scope

❑ Market research:

- ❖ **A project's/program's market** for equipment, materials, systems, designers, builders, trade partners, consultants, and other products and services
may be unique (e.g., material prices may be higher in a certain region than in other regions),
so the **CM must understand** the market well enough to **advise the owner**;

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Achieving scope

❑ Comprehensive budgets:

❖ A CM **carefully**

1. **Advises** the owner **as soon as** the CM joins the team
to **ensure** the project/program fits the owner's budget,
2. **Develops** detailed work breakdown structures
that **facilitate** cost management, standardized cost estimates, and
contingencies, and
3. **Reviews** all budgets
for **completeness** and **compatibility** with the owner's requirements;

Achieving scope

❑ Accurate schedule forecasts:

❖ CMs must be able to **synthesize**

the owner's requirements

into a well-formulated time management plan and

establish **realistic schedules**;

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Achieving scope

❑ Quality cultures:

❖ All CMs must **establish clear** policies and procedures to

1. **Meet** the owner's quality requirements and

2. **Facilitate** a commitment to quality from

- ❖ The owner,
- ❖ Their own CM staff, and
- ❖ All other team members;

Achieving scope

❑ Fair business practices:

❖ A CM

1. **Understands** general design and construction procurement processes and contracts,
2. **Prevents** conflicts of interest (or the **perception** of conflicts of interest) for the owner, themselves, and their firm (if separate from the owner);

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Achieving scope

❑ Sound dispute prevention and resolution practices:

❖ To **maintain** project/program control, the **CM must**

1. **Understand** the contractual responsibilities and relationships among all team members and
2. **Establish** systems, policies, and procedures that **collaboratively** and **proactively** resolve disputes;

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Achieving scope

❑ Risk management processes:

❖ Risks (and opportunities) are part of **any business**,

so a **CM must understand**

how to identify, assess, track, and respond to risks and

provide these services if the owner requires;

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Achieving scope

❑ Sustainability:

❖ A CM should

1. Understand

❖ Common core concepts of sustainability and

❖ Resiliency in design and construction,

2. **Consider** the **impact** of their projects and programs on future generations, and

3. **Help** teams design and build structures that are **able to adapt to change**;

Achieving scope

❑ Delivery tools:

❖ The CM does **not need** to be a technology expert,

but they **should understand**

1. What tools are currently available,
2. What new options may become available, and
3. How to answer the owner's technology questions or how to connect the owner to the appropriate resources to deliver the project or program;

Achieving scope

❑ Management information systems:

❖ The CM

1. **Establishes** a management information system (MIS, also known as a PMIS) and
2. **Informs** the team of the overall status compared to the baseline plan;

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Achieving scope

❑ Planning techniques:

- ❖ CMs should **recognize** and **understand** the different systems to plan the work that are **common in the industry**; and

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Achieving scope

❑ Construction means and methods:

- ❖ The CM **thoroughly understands** the **construction process**, regardless of the CM's contractual relationship with the owner (agency or at-risk).

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Contributing to the industry

- ❑ Finally, a **competent CM** understands that **design and construction** are constantly evolving,
so the best practices, standards, laws, technologies, materials, etc.,
that are relevant to a project or program may change over time.
- ❑ A **competent CM** must continue their professional education
to **maintain their competency** and **contribute to the profession**.
- ❑ CMs also **commit** to the development of the future workforce
to **ensure** that **future teams** are able to meet scope challenges on future
projects and programs.

RESPONSIBILITY TO THE PUBLIC

Introduction

- ❑ A CM **understands** their obligations to protect the welfare of **team members** and the **public**.
- ❑ CMs **follow** universal ethical principles to
 1. **Commit** to something **greater than themselves** and
 2. **Care** for **other living** things and the **environment**.

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- ❑ A CM **understands** that
a safe jobsite for the team and the surrounding community
is **always necessary** before a project or program can **achieve an**
owner's requirements for time, cost, quality, etc.
- ❑ In other words, **solutions to workplace safety and health issues** that protect the
team and the public are critical to the project's or program's overall success.



A CM understands that safety is about protecting the health and livelihood of anyone whom the project/program may affect.

Let's see some examples!

❑ For example, **workers** must

1. Follow all applicable laws and regulations,
2. Use the correct equipment and materials,
3. Be aware of their surroundings, and
4. Perform the work competently.

❖ However, the **team must also consider** the people near the jobsite or who will use the completed structure(s).

✓ For example, the **team must control**

- **Site access** (such as site visits from members of the public) and
- **Runoff** from hazardous chemicals.

Do CM safety services vary from project to project?

- ❑ A CM's **obligation** to provide **safety services** varies from project to project, but even if safety management is **not part** of the **CM's job description**, a **CM** still has an obligation to follow the **safety policies** of their own organization, applicable laws, and their contractual agreements.

What CM should do before providing safety management services?

- ❑ Before providing safety management services, the CM
 - ❖ **Thoroughly reviews** all legal implications of doing so and
 - ❖ **Understands** the associated risks.
- ❑ The **CM's contract** with the owner must **clearly specify** the CM's safety responsibilities, and
 - the **CM must review** the builder's (or design-builder's) agreement with the owner
 - to **ensure that no contract language specifies** additional safety obligations or responsibilities for the CM.
- ❑ The CM must **clearly outline** a system for monitoring and reporting the **builder's/contractor's compliance** with its safety plan.

Sustainability and resiliency

- ❑ A CM **understands** the **basic concepts** of how sustainable and resilient projects/programs support human health, safety, and wellness.
- ❑ A CM **recognizes** that **sustainable development** helps meet the owner's current needs **without harming** the needs of future generations.
- ❑ Meanwhile, a structure's resiliency is its ability to **withstand adverse impacts** from natural and human-made threats.

Sustainability and resiliency

- ☐ The **CM** should also **advocate** for sustainable and resilient practices within **their own organization.**
- ☐ Sustainable/resilient opportunities include **more than the activities on the jobsite.**
- ☐ A **CM sees other ways** their firm can
 - ❖ Reduce waste,
 - ❖ Protect the environment, and
 - ❖ Withstand future environmental and human-made impacts.

CLIENT-CENTERED PRACTICE

Introduction

- ☐ A CM **advises** the owner and **follows** industry best practices.
- ☐ The CM should be able to **answer** the owner's questions or connect the owner to the **appropriate resources** to achieve the project's or program's requirements.
- ☐ A CM must also **help** build a collaborative team culture to achieve the owner's requirements.

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Introduction

- ❑ The **CM's scope of services** to the owner are often **project- or program-specific**, i.e., the CM's obligations to the owner **may vary**.
- ❑ A CM **must apply** a standard of care that follows
 1. Industry's best practices and
 2. Owner's unique requirements.

What primary factors affect CM responsibilities?

Factors that may influence the CM's responsibilities

❑ Factors that may **influence the CM's responsibilities** include (but are not limited to):

❖ **Owner's priorities and culture:**

- ✓ Project/program **owners may have** unique systems and requirements,
for example, a **CM may need to** **tailor their services** to an owner
 1. With its own construction management staff,
 2. Procurement processes, and
 3. Budget requirements.

Factors that may influence the CM's responsibilities

❑ Factors that may **influence the CM's responsibilities** include (but are not limited to):

❖ **Location:**

- ✓ Projects/programs in **different geographical areas** require
 1. Different engineering and construction codes and standards, and
 2. Various administrative requirements will apply.
- ✓ **International projects** have additional issues, ranging from
 1. Codes and standards,
 2. Contractual frameworks, and
 3. Cultural differences,which the CM must manage.

Factors that may influence the CM's responsibilities

❑ Factors that may **influence the CM's responsibilities** include (but are not limited to):

❖ **Renovation versus new construction:**

- ✓ Projects/programs involving **renovation** or **rehabilitation** in and around ongoing operations

may involve **different types** of measuring and monitoring applications.

Factors that may influence the CM's responsibilities

❑ Factors that may **influence the CM's responsibilities** include (but are not limited to):

❖ **Delivery method:**

- ✓ **Whether** delivering a project/program under a design-bid-build contract, multiple prime contracts, design-build contract, etc., the **CM's obligations** to the owner will vary.

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Factors that may influence the CM's responsibilities



Whatever services a CM provides, a professional CM creates a collaborative team environment and only performs services that they are qualified and able to offer to an owner. As a best practice, CMs under-promise and over-deliver, meaning that a CM always does their best but only commits to deliver a service when the CM is confident they can meet the owner's time, cost, quality, and scope requirements.

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CM services during different phases

Project/program delivery

- ❑ A **CM** may **work throughout all phases** to meet the owner's requirements and the terms of their CM contract (if separate from the owner).
- ❖ **Ideally**, the CM joins the project or program during the pre-design phase.
 - ✓ **However**, the CM must tailor the details below to fit the needs of a particular project/program and the CM's scope of work.
 - ✓ On an actual project/program, the **CM may join the team in a later phase** and need to **apply** concepts from earlier phases.
 - ✓ These phases may also **not have** clear start and end points.
 - ✓ **Activities** may overlap between phases or occur in a different order.
 - *For example, in design-build delivery the designer and builder are the same entity, so the **CM may need** to combine activities from the design, procurement, and construction phases to **control scope**.*

Project/program delivery – Pre-design phase

- ❑ The pre-design phase is the **CM's first opportunity** to apply the construction management process and demonstrate its value to the owner.
- ❑ The pre-design phase's goal is to
 - ❖ **Develop** the owner's requirements,
 - ❖ **Initiate** overall coordination with various project/program participants, and
 - ❖ **Select** the design team.
- ❑ During pre-design, the CM should **help** the owner
 1. **Outline** their expectations and
 2. **Translate** them into realistic requirements that determine
 1. Project's/program's delivery method,
 2. Component configurations,
 3. Material specifications, and
 4. Functional performance.

Project/program delivery – Design phase

- ❑ The team's design phase goal is to **finish** a set of documents that **define** an on-time, cost-effective project/ program which can be **bid in the current local market** and that **meets the owner's requirements**.
- ❑ The **CM's primary role** in this phase is to coordinate and guide the other team members.
- ❑ The CM **advises** on
 - ❖ Quality management,
 - ❖ Constructability,
 - ❖ Cost,
 - ❖ Phasing,
 - ❖ Sequencing of construction,
 - ❖ Duration,
 - ❖ Alternative construction methods,
 - ❖ Operability, and
 - ❖ Contract packages.

Project/program delivery – Design phase

❑ The CM should also

1. **Review** the **design deliverables** and
2. **Verify** that the **designer followed** their (and the owner's) **quality management** processes.

Remember, the CM helps the owner make the most critical quality decisions during the pre-design and design phases.

Project/program delivery – Procurement phase

- ❑ The procurement phase relies on the **documents** that the team created in the pre-design and design phases to **meet** the owner's requirements.
- ❑ The team should **follow** the **policies and procedures** that they **established** in the pre-design and design phases.
- ❑ Similarly, the **design documents** must establish the project's/program's specifications.
- ❑ The CM **may manage** the solicitation of bids, bid documents, bidders lists, pre-bid conference(s), addenda, bid opening, pre-award conference(s), contract award(s), notice(s) to proceed, and notices to unsuccessful bidders, if **within the CM's scope of services**.

Project/program delivery – Construction phase

- ❑ The construction phase is when the team implements and checks the work.
- ❑ The **CM relies** on the project- or program-specific plans that clearly identify the roles, responsibilities, and authority of team members as well as the procedures for construction.
- ❑ The **builder's responsibility** is to **meet** the contract documents' requirements and referenced specifications, standards, and codes in the completed structure(s).
 1. If a CMAR, the CMAR is the same entity as the **builder** and has this responsibility.
 2. If a CM as agent, the CM as agent **monitors** the builder's compliance and ensures that the proper quality verifications occur.

Project/program delivery – Post-construction phase

- ❑ The post-construction phase's goals are to
 1. Complete and accept the work,
 2. Facilitate owner occupancy,
 3. Finish any required documentation, and
 4. Issue final payment and release of retention to the contractor(s).
- ❑ The CM
 1. Uses **final checklists** to **monitor** that the team closes out the project/program in accordance with the **owner's requirements**,
 2. Guides the team to ensure it **stays on schedule and budget**, and
 3. Ensures that the **team provides** the required closeout documentation.

Project/program delivery – Post-construction phase

- ❑ The CM should
 - ❖ **Meet** with the team to document lessons learned for future projects/programs and
 - ❖ **Issue** a final report to the owner.
- ❑ If the **owner requires**, the **CM**
 1. **Documents** when warranty periods begin and
 2. **Plans** expiration inspections approximately **30 days** before the expiration date.

How about consideration before asking
for CM compensation?

Fair compensation

- ❑ A CM negotiates honestly with **their clients** to set a **basis for compensation**.
- ❑ A CM accurately describes
 1. The **value of the services** they will perform,
 2. The expenses they will incur, and
 3. Any risks they will assume because of their responsibilities on a project or program.



Before the owner and CM can agree to a fair compensation structure for the CM's services, the CM must first competently assess the owner's requirements for the CM.

Fair compensation

☐ A CM must **understand**

1. Basic parameters described before (time, cost, quality, and scope) and
2. Menu of services the CM is **qualified and able to offer** (i.e., A CM must always understand what they agree to offer to their clients).

☐ This **understanding** is necessary before the CM can **accurately determine**

1. **What services** the owner might need and
2. **What compensation** the CM will need to provide those services.

Release of information

☐ A **CM** will only make truthful statements and protects confidential or proprietary information,

especially information about the owner or the project/program.

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Release of information – Information security

- ❑ **Information security compliance** is always one of the CM's core duties—
information compliance is **never an additional service**.
- ❑ A CM keeps confidential information secure,
which may include **proprietary records** and **data about a CM's clients**.
- ❑ On a project or program,
the CM must always establish a rigorous document control system (such as a
digital MIS)
to **control the flow of information** among stakeholders.

Is it only about the CM?

Release of information – Information security

- ❑ The **relevant governance documents** (project/program management plan, project procedures manual, construction management plan, etc.)
should also **explain or reference** the team's security requirements.

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Release of information – Information security

- ❑ However, the CM's specific information security obligations **may vary** depending on the information security policies of
 1. CM's own organization and
 2. Owner's requirements (if the CM is separate from the owner).
- ❑ The **CM** must
 1. **Understand** the relevant policies and procedures,
including how to process (i.e., Collect and analyze) and
 2. **Handle** (i.e., Store and share) confidential information,
 - ❖ **Who** has **access to which information**, and
 - ❖ **How** the team must monitor compliance.

Release of information – Information security requirements



Release of information – Information security

- ❑ For example, the **owner might require** regular performance evaluations of all team members, but
 - ❖ **Only** supervisors may conduct the evaluations and
 - ❖ Only the project's executives may see the results.
- ❑ The team may also have **other staff** (such as human resources professionals) who **monitor the process.**

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Release of information – Information security

- ❑ Note that the **duty to protect** confidential information includes **cybersecurity** **whenever** the team works with sensitive electronic data.
- ❑ **Cybersecurity** is a practice to **allow stakeholders** to access appropriate information from digital systems and devices while also **protecting that data** from unauthorized persons and entities.
- ❑ The CM does **not need** to be a cybersecurity expert, but the CM must **understand** the owner's cybersecurity requirements well enough to **ensure** the team follows them.

What standards?

Release of information – Information security

- ❑ Note that many cybersecurity standards exist within the industry, such as
 1. U.S. Federal Government's Cybersecurity Maturity Model Certification,
 2. Federal Information Security Modernization Act, and
 3. Federal Risk and Authorization Management Program.

For more, see CMAA Technology Management Guidelines.

How about public perception?

Release of information – Public relations

- ❑ **Many owners** are sensitive to the public perception of their facility investments.
- ❑ From the **CM's staff** to **trade workers** on the jobsite,
the **entire team** has access to information that the owner may need to control.
 - ❖ Therefore, the CM **must**
 1. **Advise** the owner and
 2. **Establish** a procedure
for **sharing information** with the public.
- ❑ The **owner** should **approve** any articles, social media posts, or other information about the project/program **before publication**.

What if the owner has the public relations personnel?

Release of information – Public relations

- ☐ If the **owner** has public relations personnel,
the CM must **work** with these professionals to help them **generally understand**
 1. The **technical aspects** of the project/program and
 2. The **construction management plan**.
- ☐ Typically, **these professionals** want to show that the project or program is **essential**, **cost-effective**, and of the **appropriate quality**.
- ☐ **All external requests** for information should go through these professionals.
- ☐ Similarly, any **public information efforts** should use the owner's staff.

15 CYBERSECURITY BEST PRACTICES FOR ORGANIZATIONS

Problems & trends

1. 10 years of innovation within 1 year. (Microsoft)
2. Small Businesses have the highest malicious email rate at 1 in 323 (Symantec)
3. The average cost of a data breach is \$3.86 million as of 2020 (IBM)
4. 43% of cyber attacks target small organizations (Verizon)
5. 98% of cyber attacks rely on social engineering. (PurpleSec)
6. Damage related to cybercrime is projected to hit \$10.5 trillion annually by 2025.
(Cybersecurity Ventures)
7. Phishing increased in 2020 to account for 1 in every 4,200 emails. (Symantec)

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1. Does your organization provide regular cybersecurity training & testing to all team members?

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Best practices

1. Does your organization provide regular cybersecurity training & testing to all team members?
2. Do you have MFA enabled on all accounts?

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1. Does your organization provide regular cybersecurity training & testing to all team members?
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5. Does your organization have written information security policy that all employees must adhere to?
6. Are all company emails & cloud storage regularly backed up?

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7. Is your organization running simulated phishing campaigns to raise awareness?

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8. Are all workstations or servers containing important data regularly backed-up?

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9. Do all computers in your organization have an antivirus installed?
10. Does our organization carry cyber insurance?

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11. Do you have an annual security risk assessment process?

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12. Do you have a system to track security incidents?

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10. Does our organization carry cyber insurance?
11. Do you have an annual security risk assessment process?
12. Do you have a system to track security incidents?
13. Are you sharing files securely?

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13. Are you sharing files securely?
14. Have you reviewed your specific industries data regulatory requirements?

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12. Do you have a system to track security incidents?
13. Are you sharing files securely?
14. Have you reviewed your specific industries data regulatory requirements?
15. Are you alerted when suspicious activity occurs in your organization?



مدیران حرفه‌ای صنعت ساخت (بر اساس سندی از انجمن مدیریت ساخت آمریکا (CMAA))

فصل اول: راهنمای رفتار حرفه‌ای برای مدیران ساخت

بخش سوم: رهبری حرفه‌ای تیم

ارائه دهنده:

سید محمدرضا علوی پور

(PhD, PMP, CMIT)

دانشگاه Illinois Tech آمریکا



What we will learn?

- ☐ Introduction
- ☐ Managing versus leading
- ☐ General leadership techniques
- ☐ Developing a team culture
- ☐ Building team efficiency and effectiveness: best practice of divergent and convergent thinking skills
- ☐ Communication
- ☐ Project/program documents
- ☐ Safety
- ☐ The seven success secrets of extraordinary leaders
- ☐ LEADERSHIP and ethic

INTRODUCTION

Introduction

- ❑ Design and construction involve a **team of many different professionals**, such as designers, contractors/ builders, owners, trade partners, and consultants (commissioning agents, safety representatives, risk specialists, sustainability consultants, etc.).
- ❑ The **team applies** integrated systems and procedures that **bring each team member's expertise** to the project/program to achieve the owner's requirements.
- ❑ The **desired result** is to achieve a greater benefit from the team's combined expertise than the team could realize from **everyone's individual input**.

Introduction

- ❑ In the **AEC industry**, the leader directs the project team to **perform its mission well**, successfully **accomplishing the goals and objectives** of the project.



Who is the leader of construction projects?

Leader of construction projects

- ❑ A CM is a **leader** who **coordinates** the team, **ideally** starting in the pre-design phase.
- ❑ Professionalism and teamwork are the **core** of good construction management.
- ❑ The CM, as a member of the team, should **assume** a position of leadership.
- ❑ This **leadership** should be a position of service (not dominance) that **integrates** the individual elements of the delivery process **into** a cohesive and collaborative system.



What steps could be taken?

Steps in leadership development

- ❑ There is a **plethora of writers** whose books focus on leadership.
- ❑ One of the **most insightful and relevant** writers to our profession is former U.S. Army Colonel and Construction Management Professor William W. Badger.
- ❑ **Badger** has focused his **leadership research** on the **AEC segment** of the economy.
- ❑ **After a career** as an Army Officer honing his leadership skills, **he performed major research studies** for the Construction Industry Institute (CII) and the National Academy of Construction (NAC).
- ❑ We have drawn on **Badger's writings and discussions** in preparing the leadership section of this course.

Steps in leadership development

❑ Badger's seven-step Leadership Transformational Model is as follows:

1. Lead and know yourself
 2. Prepare to lead by gaining awareness of leadership skills
 3. Lead by implementing leadership skills
 4. Lead subordinate leaders while practicing leadership
 5. Develop subordinate leaders' teams
 6. Develop a leadership climate by empowering and developing organizations
 7. Lead changes to processes by implementing best value for the organization
- (Badger 2018, 1–5)

What 6 certain values are essential for young professionals?



Core values

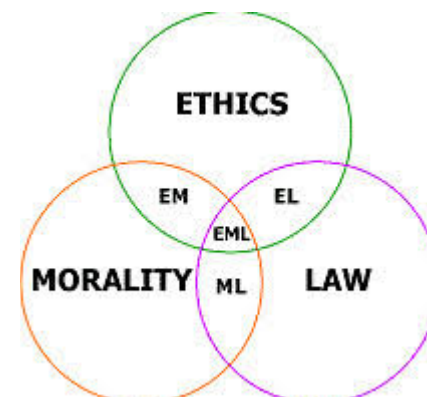
- ☐ For **young professionals** in the AEC industry,
we feel that **certain core values** are **essential**.
- ☐ **These values** define the actions and decisions made in
everyday life—on or off the job.

Let's see them!

Core values

❑ The first essential core value is character.

- ❖ **Character** is a **complex combination** of moral and ethical traits that influences the **decisions** of a person.
- ❖ It implies **possessing strength** of mind, resolution, independence, and moral strength.
- ❖ It **differs** from personality traits in that **character** determines what **one must do**, whereas **personality** traits determine **what one likes or prefers to do**.



Core values

❑ The second core value is integrity.

- ❖ To have **integrity** is to **adhere** to a strict ethical code.
- ❖ **Good relationships** depend on trust.
- ❖ You must have a **high level of integrity** in order for people to **trust you** as a leader.

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❑ The third core value is honesty.

- ❖ Honesty is to value truth and to tell the truth when relevant.
- ❖ We have **all slipped occasionally**.
 - ✓ However, it must be a **value that one strives** for.
- ❖ **Professional relationships** depend on honesty.

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☐ The fourth essential value is ethical behavior.

☐ This means **different things** to **different people**.

☐ It can be defined as **acting in ways consistent** with what society, community, or other individuals typically agree constitute good values.

☐ In **professional life**, it means complying with specific codes of ethics.

❖ *For instance, the American Society of Civil Engineers (ASCE) has a code of ethics.*

❖ *The same is true of most of the other discipline societies, such as the American Institute of Architects (AIA) and the National Society of Professional Engineers (NSPE).*

❖ *In addition, most of the companies in the AEC industry have their individual codes.*

Core values

❑ The fifth and sixth essential values for a successful young professional are fairness and empathy.

- ❖ **Fairness** contributes to trust and lasting relationships.
- ❖ If a **leader** is not fair, the **leader** will not last long.
 - ✓ Just as important is **empathy**.
 - **Empathy** is understanding the feelings, thoughts, and attitudes of the people one leads.
- ❖ A **leader must** have empathy in order to be **motivated to take care** of the people she or he is **leading**.

What are 13 leadership principles?

Leadership theory and principles

❑ There are **13 leadership principles** which are thoroughly applicable to the AEC industry:

1. Know yourself and seek self-improvement.
2. Be technically proficient.
3. Seek responsibility and take responsibility for your actions.
4. Make sound and timely decisions:
 - a. Identify the problem.
 - b. Gather information.
 - c. Develop courses of action.
 - d. Analyze and compare courses of actions.
 - e. Make a decision.
 - f. Make a plan.
 - g. Implement the plan.

Leadership theory and principles

❑ There are **13 leadership principles** which are thoroughly applicable to the AEC industry:

5. Set the example.
6. Balance the needs of the individuals in your organization with the goals, tasks, and missions of the organization.
7. Reward individual and team behavior that supports the organization's tasks and missions.
8. Do not tolerate team members that are detrimental to the performance of the team.
9. Develop morale and esprit in the organization.
10. Involve followers in the planning of operations.
11. Mitigate personal concerns that affect team performance.

Leadership theory and principles

❑ There are **13 leadership principles** which are thoroughly applicable to the AEC industry:

12. Ensure your team members are properly cared for and have the resources they need to succeed.

13. Keep your team members informed

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MANAGING VERSUS LEADING

موسسه مهندسی و مدیریت ساخت علوی پور (ACEMI)

دفتر آموزش



تهران، بلوار فردوس شرق، مجتمع آبگینه، طبقه سوم اداری، واحد C42



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