

ETHICS and the PROFESSIONAL

SAME Industry Day 1 st Annual

Sponsored by:

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School of Computing and Engineering, UMKC. Dr Kevin Z. Truman, Dean**

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Presented By: Merrill W. Watt, II, P.E.

SAME BG Walter O. Bachus Gold Medal 2008

Past President, Western Chapter, Missouri Society of Professional Engineers

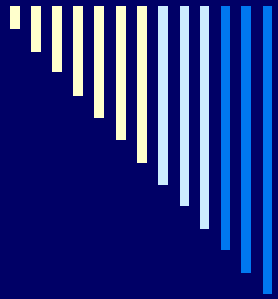
Past President, Kansas City Section, American Society of Civil Engineers



Wednesday

28 Jan 09

UMKC Pierson Hall



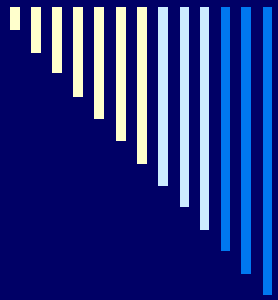
INTRODUCTION

Personal Information

- BS Civil Engineering, U of Missouri
- MS Civil Engineering, U of Missouri
- Command and General Staff College, U.S. Army

38 years engineering, consulting, design, environmental, construction management, facilities operations, project / program management, marketing, organization officer, & leadership

- 30 years U. S. Army Corps of Engineers
US & 23 + nations
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LET'S TALK

Who has worked on engineering or technology tasks ?

What did you do?

Civil, Computing, Construction, Electrical, Mfg?

What size of private business or government entity?

Small Large Corporation

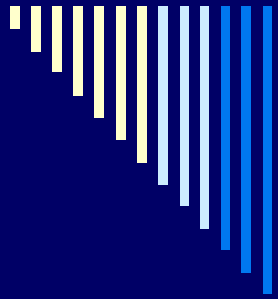
Sole Proprietorship

What are your expectations of this lecture?



OBJECTIVES

- Develop thinking, analysis, and perspective skills.
 - Develop ethics reasoning.
 - Gain experience in applied ethics.
 - Exercise communications abilities in a group setting.
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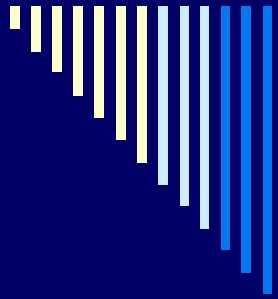


ETHICS & PROFESSIONALISM

- What do you think ethics are?
- What is professionalism?
- Are ethics and professionalism different and inseparable?
- What makes up our personal “Code of Ethics”?
- Do ethics follow us outside our training and practice?

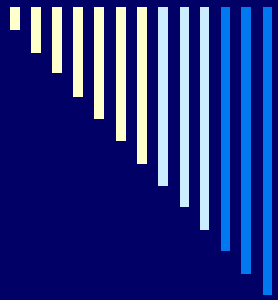
Community groups

Company Board of Directors



PERSONAL CODE of ETHICS

- Can we agree that our personal “Code of Ethics”:
- Has evolved through values and principles we have adopted or developed as individuals?
- May change over time and is continuously developing?



VALUES and PRINCIPLES

VALUES are those beliefs we hold important.

Values -- Can change over time.

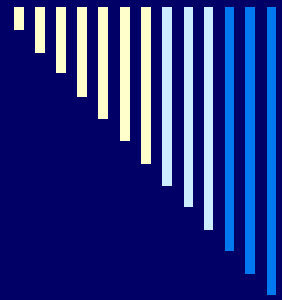
Example -- At my age I may value health more than I did 30 years ago.

Values -- Do not carry a sense of obligation

Example -- You may like jazz but you are not personally obligated to go to a jazz concert.

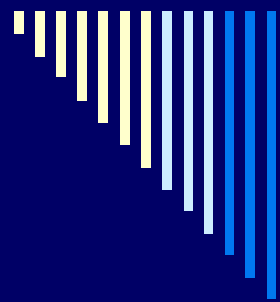
Values -- Can be immoral

Example -- “honor among thieves” indicates that even dishonest people have values.



VALUES -- many sources

- Parents
- Teachers / Professors
- Leaders (Business, Political, Social Groups)
- Cultures in which we developed
- Organized religions
- Others -- discuss
- Peers



CORE VALUES

1. Integrity

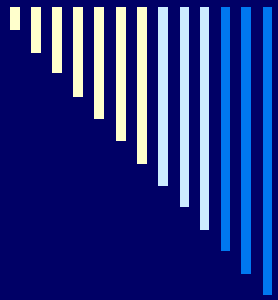
exercising good judgment in professional practice
adherence to ethical principles

2. Honesty, including:

truthfulness
fairness
sincerity

3. Fidelity, including:

faithfulness to clients
allegiance to the public trust
loyalty to employer, firm or agency
loyalty to the profession
for the theist, faithfulness to God



CORE VALUES

4. Charity, including:

caring / kindness
good will
tolerance
compassion / mercy
adherence to the Golden Rule

5. Responsibility, including:

reliability / dependability
accountability
trustworthiness

6. Self-Discipline, including:

acting with reasonable restraint
not indulging in excessive behavior

The above core ethical values were developed based on research by Dr. Ron Bucknam

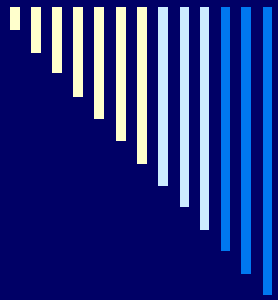


PRINCIPLE (S)

What are they?

They are based upon sets of values / core values.

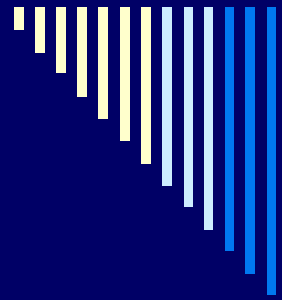
- A fundamental truth.
 - A primary basic law, doctrine, etc
 - A settled rule of action.
 - A governing law of conduct.
 -
 - Also, loyalty to principles – as “a man of no principles.”
-



PRINCIPLE (S)

Fundamental Principles develop from our deepest values.

- They guide our lives.
- Provide us with identity and esteem.
- Gives us constitution –backbone– to act and respond with integrity and wisdom.



ETHICS DEFINED

Assuming our principles are founded on worthwhile values, and we are true to our principles, we are or have become **ETHICAL** individuals

Ethics can be defined as a process by which we consistently implement our principles.



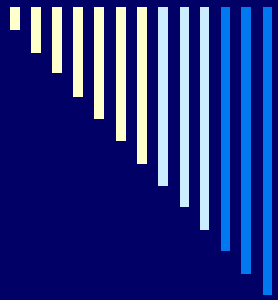
TYPES of ETHICS

Are there different types of ethics?

There are many distinct types of ethics.

Three important ones:

- Personal ethics
 - Legally required ethics
 - Professional ethics are based on the professional's responsibility to serve the public good.
-



PERSONAL ETHICS STEPS (9)

Practice ethical behavior actively (initiate a personal ethical awareness training program), including definition of personal worldview and review of core ethical values.

The ethical professional is consistent !

Beware of "new ethics" programs - very little of true value is "new"; all of the necessary tools are already at your fingertips.

Define the ethical problem when it arises - ignoring the problem doesn't make it go away.

Formulate alternatives - avoid "first impulse" solutions without having extensive ethical awareness training and experience.



PERSONAL ETHICS STEPS (9)

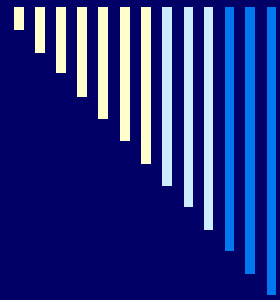
Evaluate the alternatives - are they ethical? am I the sole beneficiary?
how would I feel if the roles or circumstances were reversed?

Seek additional assistance, as appropriate - previous cases, peers,
reliance on personal experience, prayer

Choose best ethical alternative - the one that does the most good for
all the right reasons

Implement the best alternative - no initiative, no results

Monitor and assess the outcome - how to improve the next time



CODE OF ETHICS FROM THE PROFESSIONS

American Institute of Constructors (AIC)

American Society of Civil Engineers (ASCE)

Association of Computing Machinery (ACM)

Institute of Electrical and Electronic Engineers (IEEE)

National Society of Professional Engineers (NSPE)

Society of Manufacturing Engineers (SME)

Several professions apply their Code of Ethics to all members who qualify at different grades, including technologists. This recognizes that the profession is made up of people with different training, skill and experience.

850 Codes

American Library Association

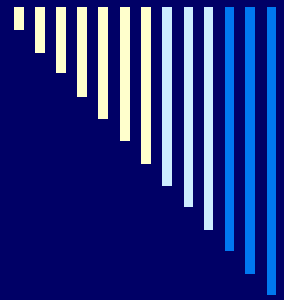
Pastoral Code



SOLVING ETHICAL DILEMMAS

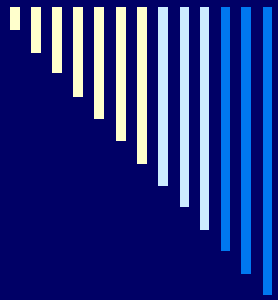
Guidelines for Facilitating Solutions in Professional Practice

1. **Determine the facts in the situation** - obtain all of the unbiased facts possible.
 2. **Define the Stakeholders** - those with a vested interest in the outcome. Individuals, company, leaders in a profession.
 3. **Assess the motivations of the Stakeholders** - using effective communication techniques and personality assessment.
 4. **Formulate alternative solutions** - based on most complete information available, using basic ethical core values as guide.
-



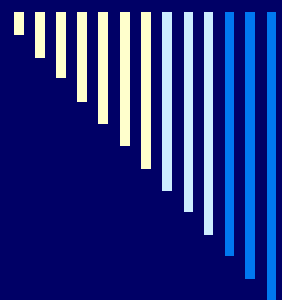
SOLVING ETHICAL DILEMMAS

5. **Evaluate proposed alternatives** - short-list ethical solutions only; may be a potential choice between/among two or more totally ethical solutions
 6. **Seek additional assistance, as appropriate** - engineering codes of ethics, previous cases, peers, reliance on personal experience, prayer
 7. **Select the best course of action** - that which satisfies the highest core ethical values
 8. **Implement the selected solution** - take needed action
 9. **Monitor and assess the outcome** - improve the next time
-



SUMMARY

- Values can change over time.
 - Values can be: personal, legally required, professional, company.
 - Core Values are strongly held beliefs; may combine many values.
 - Principles are founded on core values.
 - Can be: Personal, Legal, Professional, Company
 - Ethics -- Consistent application of Principles
 - Review Code of Ethics from the Professions
-



SUMMARY

Determine who you are !

Track how you apply your core values for 90 days.

Are you consistent ?

When prospective employers talk about company vision & your career development, **ASK** the recruiter about company values, principles, code of ethics.



VALUE “ADDS”

The Online Ethics Center for Engineering & Science.

Case Western Reserve University www.onlineethics.org

Applied Engineering Ethics “Case of the Month Program”

National Institute for Engineering. Texas Tech University

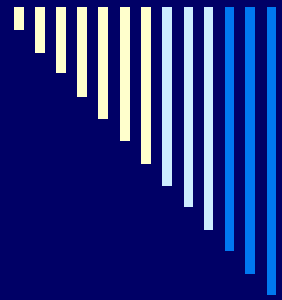
Murdough Center for Engineering Professional’s

Texas Tech University www.Murdough.ttu.edu

Ethics Bowl, Center for the Study of Ethics in the

Professions Illinois Institute of Technology

www.iit.edu/departments/csep/library

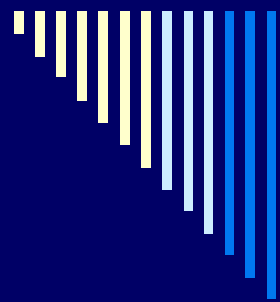


ROOS ETHICS BOWL CASE STUDY

Ethics Apprentice

No one gets fired !

It is time to play.



ROOS ETHICS BOWL CASE STUDY

Ethics Apprentice

no one gets fired !

Divide into teams

Team name: "Values"

Team name: "Principles"

Each Team

Facilitator name?

Team communicator name?

Resources provided:

Case study scenario.

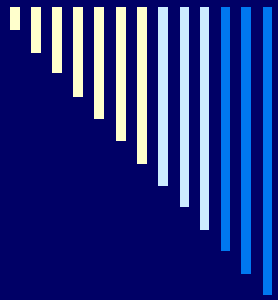
Code of Ethics.

Questions:

What are the main issues?

What ethics cannons are involved?

What is your team's ethics
conclusion / opinion?



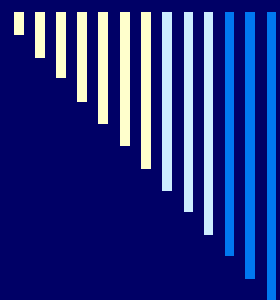
YOU'RE TOAST !

Roos Ethics Bowl -- Electrical

FACTS

Jane is a recent graduate engineer working for an electrical consulting company (Eleck Inc.). She is given the job of laying out the wiring for a new home. In particular, she must specify the circuit breakers that protect the circuits to the wall plugs of each room and the ceiling lights. Normally these circuits are wired with AWG #14 wire and are protected by 115 V/ 15 A breakers.

Two months after the house was built and the family moved in, a fire occurred in the house causing \$75,000 worth of damage. The Fire Marshall's report stated that the fire was caused by an electric toaster having a short circuit in it. The report also stated that the short circuit current in the toaster was estimated to be 550 A and lasting for 10 seconds.

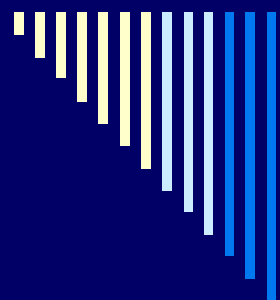


YOU'RE TOAST !

Roos Ethics Bowl -- Electrical

QUESTIONS

Did Jane meet professional ethics when she approved of a 20 A breaker?



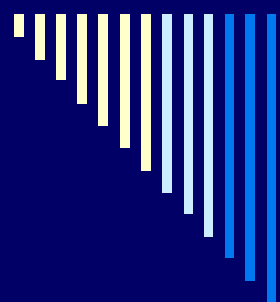
YOU'RE TOAST !

Roos Ethics Bowl -- Electrical

REFERENCE(S)

Institute of Electrical and Electronic Engineers
(IEEE) Code of Ethics

National Society of Professional Engineers (
NSPE) Code of Ethics

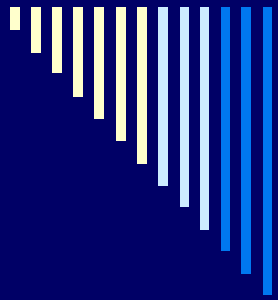


YOU'RE TOAST !

Roos Ethics Bowl -- Electrical

DISCUSSION

- What type of training did Jane have? How much electrical expertise and experience?
- Why did she ask Jerry for an opinion? Did Jerry volunteer an opinion?
- Why didn't Jane ask her supervisor for an opinion, or the person that assigned her the job?
- Did Jane keep notes and calculations in the project's records?
- Did Eleck Inc. conduct a Quality Control review of Jane's work product?
- Did the home building company ask for a breaker size clarification when preparing their bid?
- What comment did the local codes review body make before issuing a building permit?
- Was there a construction phase observer on-site full or part time during the construction phase?
- Did building code inspectors note overcapacity breakers during their progress inspections.
- What was cited by code inspectors before an occupancy permit was issued?
- Did a mortgage company or property insurance company note any electrical code violations when performing their independent inspections?
- For product liability purposes what was the toaster's design specifications for amperes?

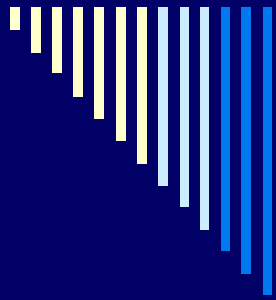


YOU'RE TOAST !

Roos Ethics Bowl -- Electrical

DISCUSSION

- For product liability purposes what was the toaster's design specifications for amperes?
- What is the failure history for that toaster model?
- What knowledge did the toaster manufacturer have about material or manufacturing process defects.
- Any product recalls issued or warnings to the public by the manufacturer?
- Jerry seemed only to think in terms of multiple appliances concurrently operating within their design load range.
- Did Jerry do "catastrophic occurrence" thinking to envision a load condition that exceeds 20 A?
Lightning strike, Appliance Short.
- Eleck Inc. has a duty an obligation to adequately supervise and control employees.
- Does Eleck Inc's have a Quality Control Review Process ?
- What errors or omissions did QC note in the project's files ?



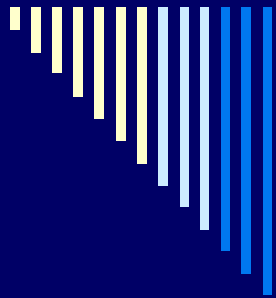
YOU'RE TOAST !

Roos Ethics Bowl -- Electrical

CONCLUSION(S)

It was Jane's ethical responsibility:

- To check the National Electrical Safety Code (NESC),
- To check the local building codes where the house was to be built.
- To determine whether it is justifiable to specify a 20 A. breaker rather than a 15 A breaker.
- To investigated the specifications of each breaker and determine whether there are any problems such as i2t overload.



YOU'RE TOAST !

Roos Ethics Bowl -- Electrical

ETHICS REVIEW OPINION

NSPE Code of Ethics

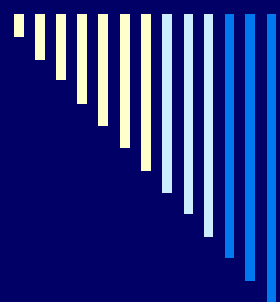
Jane violated the National Society of Professional Engineers Code of Ethics for Engineers Fundamental Canon No. 1, and Rules of Practice No.1, which deal with the safety, health, and welfare of the public.

Jerry violated the NSPE code of Ethics for engineers Fundamental Canon No. 2, and Rules of Practice No. 2, which demands that engineers shall perform services only in the areas of their competence.

IEEE Code of Ethics

Jane violated IEEE Rule 1., To accept responsibility in making engineering decisions consistent with the safety, health and welfare of the public, and to disclose promptly factors that might endanger the public or environment.

Jerry violated IEEE Rule 6., To Maintain and improve our technical competence and to under take technology tasks for others only if qualified by training or experience, or after full disclosure of pertinent limitations.



YOU'RE TOAST !

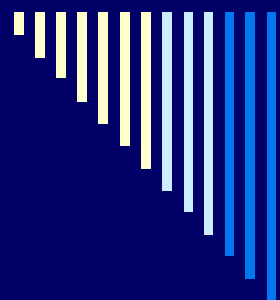
Roos Ethics Bowl -- Electrical

ETHICS REVIEW OPINION

Eleck Inc. Company Ethics

It must be noted that Eleck Inc. is ethically responsible, and very likely legally liable, for the fire. A Licensed professional electrical engineer must sign and seal drawings, specifications, etc. having to do with public safety. If Jane was not a P.E. qualified to do electrical power engineering, a P.E. must supervise and sign/seal the work.

The mistake is a flagrant one because the National Electric Safety Code (NESC) requirement of a 15 Ampere breaker is fundamental and well known in the electrical contracting trade, and by electricians and building inspectors. These individuals also may share culpability here.



CONGRATULATIONS

You have been a great group !

**It has been my pleasure to work with YOU !
America's movers and shakers, and opinion shapers.**

**GKC SAME provides a PDH certificate. Get and sign the attendance
roster**

Thanks for the honor of talking with you
