In the abstract any one of the three topics of this paper could generate thousands of pages of discussion and debate and still not exhaust the topic. Therefore, to narrow the focus of this paper only one theme will be discussed:

- In what ways do the ethics, standards and legislation of preservation affect the practice of engineering?

Thence, out of that discussion two questions need to be addressed:

- How should an engineer learn about those topics?
- When should an engineer learn about those topics?

Each professional society promulgates a code of ethics which its members are obligated to observe in the practice of their profession. Most such codes of ethics, with some modification, or word tinkering, are similar. The ASCE Code of Ethics was adopted in
1914 and most recently amended in 2006. In 1975, the ASCE adopted the fundamental principles of the Code of Ethics of Engineers as accepted by the Accreditation Board for Engineering and Technology, Inc., and incorporated them into their Code of Ethics.

The ASCE Code of Ethics starts with the four Fundamental Principles of the ABET and then identifies seven Fundamental Canons:

1. Engineers shall hold paramount the safety, health and welfare of the public and shall strive to comply with the principles of sustainable development in the performance of their professional duties.

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

3. Engineers shall issue public statements only in an objective and truthful manner.

4. Engineers shall act in professional matters for each employer or client as faithful agents or trustees, and shall avoid conflicts of interest.

5. Engineers shall build their professional reputation on the merit of their services and shall not compete unfairly with others.

6. Engineers shall act in such a manner as to uphold and enhance the honor, integrity, and dignity of the engineering profession and shall act with zero-tolerance for bribery, fraud, and corruption.

7. Engineers shall continue their professional development throughout their careers, and shall provide opportunities for the professional development of those engineers under their supervision.
The ASCE Code of Ethics then elaborates on the Fundamental Canons with “Guidelines to Practice Under the Fundamental Canons of Ethics”, in which each canon is further defined by a series of statements of practice.

The NSPE has a similar Code of Ethics for Engineers, which is organized into a Preamble, Fundamental Canons, Rules of Practice, and Professional Obligations. With some differences in emphasis and nuanced changes in phrasing the NSPE document covers essentially the same issues and takes the same positions as the ASCE document.

In these codes of ethics one can see a definition of the practice of engineering that places the highest priority on the public safety and welfare, and defines the parameters of personal conduct with no contextual relationship to the type of project under the engineers’ purview. Preservation sensibilities would appear to have no relevance in an engineer’s ethical approach to a project or client.

W. Brown Morton III in his paper “The Secretary of the Interior’s Standards for Historic Preservation Projects: Ethics in Action”, delivered at the Annual Meeting of the National Council for Preservation Education, Indianapolis, Indiana, October 23, 1993, provides a good synopsis of the ethical basis for preservation, preservation standards and preservation legislation. In that paper Morton traces the development of preservation ethics through a series of intellectual and methodological standards that evolved over the last century with the objective of defining a consistent professional approach to preservation.
He describes an evolving philosophy based in the Athens Charter of 1931, The work of Fiske Kimball and the Advisory Board on National Parks, Historic Sites, Buildings, and Monuments, in the 1930’s, the International Charter for the Conservation and Restoration of Monuments, otherwise known as the Venice Charter, in 1964, culminating, in the United States, with the development of the Secretary’s Standards. These several documents define ethics in preservation as a natural outgrowth of a philosophy based on the assumption that there is a value to cultural artifacts and recognition of the importance of context in the preservation of the built environment.

The ethical bases defined by these documents appear to be founded in a world completely different from the engineer’s world as defined by his ethos. Where most engineers first confront conflicts with preservation ethics is in reconciling the apparent conflict between preserving historic fabric and the “prime directive” as described in the first of the seven Canons above – i.e. “Engineers shall hold paramount the safety, health and welfare of the public…”.

The ability to resolve this problem requires the development of more sophisticated and nuanced design solutions as well as a better fundamental understanding of the philosophical underpinnings of preservation ethics, standards and legislation. Both areas of knowledge are acquired through education and experience, but only the former is germane to this discussion.
Where and when is it appropriate in an engineer’s professional development to introduce preservation ethics, standards and legislation? Ignoring for a moment preservation, when are any elements of professional ethics, standards and legislation insinuated into an engineer’s education?

I am far removed from my college experience, and such experience may bear no relationship to current curricula, but I recall very little, if any, of these topics were covered at the undergraduate level. The primary emphasis was to develop a core set of technical skills with the implication that professional ethics, knowledge of standards and understanding of design codes would develop in the work place under the direction and guidance of your employer(s). In a sense this kind of “apprenticeship” period is codified in the sequence and emphasis of the two parts of the licensing process.

Another way to look at it is that up to a certain level the engineer is presented problems as defined by others and must use the tools he has in his repertoire to solve the design problem. The engineer’s maturation into a design professional involves acquiring the skills to define the problem as well as solve the problem. It is in the defining of the problem that the engineer needs to be well grounded in all the ethics, standards, codes, and legislation that come into play.

In that context it would seem that it is premature to explore preservation ethics at the undergraduate level; although it would be good to hint at the existence of such issues by introducing preservation concepts in the problems the students are presented to solve –
i.e. material, size, and disturbance limitations as design parameters and give a reason for those limitations as being grounded in preservation standards.

The most appropriate time for a deeper exploration of preservation ethics, standards and legislation should be at the graduate level and/or in the work environment through professional development programs offered by professional societies (APT, ASCE, etc.). Such a course needs to trace the history and development of historic preservation practice in this country at least back to the 1930’s, as summarized by Brown Morton and must include critical readings and understandings of the various charters and standards that have been promulgated, including the current Secretary of the Interior’s Standards in its various forms.

If the U.S. educated engineer is to be a global participant in preservation work, then the topic must be expanded to include the European experience, which is distinctly different, has a longer history, and demonstrates an amalgamation of several different approaches to the preservation or conservation of buildings.

One final thought on the issue of preservation ethics is one that I have mulled over for a number of years without voicing, or putting to print. What is our ethical responsibility to the original designer and his, or her, work? This is a question at the core of the preservation standards. Most of the time engineers take their cues from the architect or other lead professional, who establishes the design intent. As engineers specialize in preservation engineering and become more attuned to preservation ethics, should not the
original architect and his, or her, original vision also be regarded as a client, albeit a ghostly one, and should not the engineer be more active in acting as a faithful agent, or trustees for that client (Canon 4)?