

Legal Education for Civil Engineers in the Context of Bangladesh

**Ruksana Akter¹, Md. Khairul Anwar Robin², Nazmul H. Mazumder³,
MD. Taukir Ahmed⁴, Arshi Salehjee⁵**

^{1,3}Lecturer, Department of Law, CCNUST, Bangladesh

^{2,4}Lecturer, Department of Civil Engineering, CCNUST, Bangladesh

⁵Graduate, Department of Architecture & Interior Design, JD Birla Institute, Kolkata, India.

Abstract

As difficult as the work of a civil engineer is, so too are the current regulatory requirements for building projects. However, it is often believed that legal expertise and knowledge are not at all required for the field of civil engineering. But legal issues related to neighboring, environmental, and professional engineering laws, as well as civil and public construction legislation, are frequently raised over the course of construction projects. Though civil engineers are less involved in legal aspects of building than architects and construction managers are. However, several laws and regulations also have an impact on the civil engineers' daily work lives. To find out the necessity if legal education for Civil Engineers several syllabuses of Civil Engineering department of different universities have been studied along with a survey to project engineers has been done to find the usage of Legal aspects. According to the survey report and analysis of syllabuses it's being found that not all but some vital legal educational portions are used in Civil Engineering works. To prevent legal problems that could lead to a financial or personal disadvantage, it is essential to have a basic awareness of the legal system of one's native country, the legal connections in building projects, and pertinent legal sources. This paper indicates the need for legal education for civil engineers in Bangladesh. It also indicated the global need to educated civil engineers in law that is related to them.

Keywords: Legal education, engineering law, law for civil engineers, construction law, construction and safety law.

1. Introduction

As the job of a civil engineer is challenging, as the legal aspects of a construction process is also challenging. Though there are several opinions that civil engineering is such a profession where legal knowledge and expertise is not required. But civil engineering projects touches some portions of legal aspects for example civil construction law, neighbor law, environmental law, land acquisition law, apartment selling law sometimes the civil laws. Surely an architect or construction project owners faces more legal issues but civil engineers are also involved in legal issues as they have to face some for example sometimes a pause in construction work. To prevent legal problems that could lead to a financial or personal disadvantage, it is essential to have a basic awareness of the legal system of one's native country, the legal connections in building projects, and pertinent legal sources.

To be highly expert in their professional work a civil engineer should have minimal knowledge of law related to their work. In Germany, this point of view is supported by the construction industry, professional associations such as the Chambers of Engineers and public employers which all are requiring law topics for civil engineering education (AS Bau-Alliance, 2018). Choosing which subjects universities should provide, at what level, and to what extent is tough.

2. LEGAL EDUCATION FOR CIVIL ENGINEERING STUDY PROGRAMS

Legal topics play a minor role in a civil engineer's work. Hence, most of the German higher education institutions offer law contents in civil engineering study programs on different educational levels and to various extents (Klaus Holschemacher and Ulrike Quapp, 2019). As an example, coming in contact of fundamental information of a country's legal system or pursuing a course in public construction law, a course in civil construction law, transportation planning or city planning, depended from the respected university. Of course, there are noteworthy arguments against law contents in civil engineering study programs, such as the reduced time for engineering-related courses (Quapp U, Holschemacher K, 2014). Furthermore, despite the fact that legal knowledge is becoming an increasingly important component of construction projects over the past several years, a significant portion of civil engineering students often exhibit little to no interest in legal matters. Civil engineers now interact with legal matters considerably more frequently as a result of the expansion and complexity of legal and technical norms and regulations. Therefore, a legal education is required to ensure graduates' employability and to adequately equip them for their future careers. Not all facets of law must be learned by civil engineers. Knowing the fundamentals of the legal system in which they will practice, being able to recognize pertinent legal sources, and knowing where pertinent laws and regulations may be located are all crucial.

By teaching that, universities enable graduates to recognize risks in their daily work life and ensure the ability to decide whether there is a problem that they can solve by themselves or if they better should search for legal counsel.

The legal topics covered in civil engineering schools don't always need a lot of time. Include legal topics in civil engineering curricula rather than teaching the subject separately is one potential option. Aspects of legal planning could be included in modules like "building construction" or "road planning," for instance. Of course, it will also cut down on the time needed for engineering content. Furthermore, the assigned lecturer will be required to teach law-related material in addition to subject-related material. Offering law courses in a separate course and using seasoned legal professionals as teachers will be the preferable alternative.

As per the opinions of authors, in a bachelor program 3 contact hours per week within 14 weeks resulting in 4 credit points based on the European Credit Transfer System (more information: Bologna Working Group on Qualification Frameworks (Bologna Working Group on Qualification Frameworks, 2005) are sufficient to teach basics of the German legal system and of building-related fields of law. 4 credit points in Germany correspond with 120 students' workload and are around 2% of the total amount of credit points of a bachelor program.

It should be mandatory for civil and structural bachelor programs to include law education in order to guarantee graduates' employment and a comparable level of education. Students may have additional freedom of choice in master's degrees, expanding on their foundational bachelor's-level legal knowledge.

3. FURTHER TRAINING BESIDE THE JOB

A further legal education appears required to keep current and prevent disadvantages for the business or oneself because law is always changing and civil engineers typically change their professional sector more than once throughout their career. Specialized groups of civil engineers in Bangladesh are required by legislative laws to continue their education, as do the members of professional societies. Even so, it will be advised to pursue more legal education even if it is not required. The constantly evolving laws and regulations governing building processes necessitate familiarity with the most recent advancements in law and technology as well as recent court rulings to guarantee high-quality work. Universities, professional organizations, and private educational facilities all provide further legal education in other countries.

4. SCENARIO OF SYLLABUS OF CIVIL ENGINEERING PROGRAMS OFFERED BY DIFFERENT UNIVERSITIES IN BANGLADESH

The art and science of designing and creating infrastructure projects is known as civil engineering. This can be done on a large scale, such when creating national water supply or transportation networks, or on a smaller one, like when building specific roads or structures. The design, construction, and maintenance of the physical and naturally constructed environment, including projects like roads, bridges, canals, dams, and buildings, is the focus of the professional engineering field known as civil engineering. Civil Engineering program includes Transportation Engineering, Water Resources Engineering, Structural Engineering, Urban Engineering, Geotechnical Engineering, Building Technology, Materials Engineering, Environmental Engineering, Coastal Engineering, Earthquake Engineering, Design of Hydraulic Structures. All these engineering is directly related to legal aspect and thus requires a minimal understanding of laws and act to construct the above-mentioned structures. Recently we have constructed a mega project named “The Padma Multipurpose bridge” have faced a lot of legal issues related to environmental law, River law etc.

After studying the syllabuses of different universities named Ahsanullah University of Science and Technology (AUST), University of Asia Pacific (UAP), Stamford University Bangladesh, IUBAT, KUET, CUET there is no dedicated course related to law that is being used in professional work of a civil engineer.

5. A Survey Report of Different Project Engineers

To find the actual scenario of civil engineers facing legal issues in their daily job life, a survey was made. A survey form was designed including the following questions, (the form was designed in Bengali but here the questions are written in English for better understanding).

1. Are you engaged in any project?
2. Which of the following legal issues you have faced in your project?
 - a. Environmental Law
 - b. Construction Law
 - c. Land Acquisition Law
 - d. Transfer of Property Act
 - e. Flat sale act under transfer of property act
 - f. River Protection Law
3. Did you study the above-mentioned law on the period of your study?

72 engineers from Cumilla, Bangladesh participated in this survey and the survey report showed that 80.6% of engineers faced Environmental Law, 91.7% of engineers faced Construction Law, 77.8% of them faced Land Acquisition Law, 27.8% of them faced the Transfer of Property Act, 31.9% faced the Flat sale Act under transfer of property act and 20.8% of them had faced River Protection Law. They also stated that they gained knowledge about all these laws after their graduation and they feel that if they had been taught this at the time of their graduation they would have performed better.

6. CONCLUSION

In order to ensure that a civil engineer have the credentials to operate professionally in design and construction, law education up to a certain degree is required, according to the conclusion. This saves the construction industry, employers, and the civil engineers themselves time and money that would otherwise be required to pay for legal advice, matching fines, and litigation. Therefore, the authors suggest that every civil engineering bachelor degree in Bangladesh include a mandatory law module that covers legal fundamentals as well as public and private building legislation.

7. References

1. AS Bau-Alliance for the Accreditation of Courses of Studies in Construction (2018) *Reference Frame for Courses of Studies in Civil Engineering* (Bachelor).
2. Klaus Holschemacher and Ulrike Quapp, “Law Education for Civil Engineers”, *HTWK Leipzig University of Applied Sciences*, Germany, March 26, 2019.
3. Quapp U, Holschemacher K (2014), The Importance of Construction Law in Civil and Structural Engineering Education. In: *Chantawarangul K, et al. (Eds.), Sustainable Solutions in Structural Engineering and Construction. Proc. 2nd Australasia and South East Asia Structural Engineering and Construction Conference–ASEA-SEC-02*, Bangkok, Thailand.
4. Bologna Working Group on Qualification Frameworks (2005) A Framework for Qualifications of the European Higher Education Area: 59. *Bredgade: Ministry of Science, Technology and Innovation Denmark*, Denmark, pp. 1-200.