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## **SUSTAINABLE DEVELOPMENT IN STRUCTURAL ENGINEERING BY ADOPTING SELF-COMPACTING CONCRETE (SCC) ALONG WITH CONCRETE FILLED TUBE (CFT)**

**Abstract:** The concept of Sustainable Development is decades old, yet again its implementation has been in vain. As per recent research and surveys, structural engineering has the finest scope to utilize numerous materials which can result in saving of raw materials. Self-compacting concrete has resulted self-consolidation and helps in filling up the voids. This has been a new research in the field of Structural Engineering and is directly upholding the principles of Sustainable Development. There are multiple opportunities to develop SCC by utilizing recycled waste material or other additives in concrete. However, different parameters of environment must be considered while making this possible, like hazardous waste often make their way into the mixture which makes it unsustainable for use. Concrete filled tube, on the other hand, is the phenomenon to be used to determine axial compressive behavior, length of column, and strength. It involves the usage of different Code of Practice to make it in line with the standards. In order to avoid the release of Acoustic Emission, which is the release of high frequency stress wave generated after release of high energy, no change must occur during crack initiation and growth. High sensitivity to crack growth, the ability to locate the source, its passive nature and the possibility to perform real-time monitoring are some of the attractive features of the AE technique. In spite of these advantages, challenges still exist in using the AE technique for monitoring applications, especially in the analysis of recorded AE data as large volume of data are usually generated during the monitoring process.

**Keywords:** Self-Compacting; Concrete; SCC; CFT; Concrete-filled; Structural; Engineering; Civil-Engineering.