



***Sustainable Development Practices and Eco-Friendly Infrastructure in
User-Friendly Digital Libraries***

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Abstract :

This study looks at how to combine eco-friendly infrastructure and sustainable development strategies in digital libraries that are easy to use. It looks at how digital libraries can have less of an effect on the environment by using data centers that use less energy, optimizing resources in the cloud, and using less physical materials. The study also looks more closely at the role of green technology, such as using renewable energy, low-power servers, and long-lasting digital preservation methods. The focus is on creating user-friendly interfaces that are easy to use, accessible, and environmentally friendly. The report also talks about regulatory frameworks and institutional

initiatives that help libraries make the switch to digital in a way that is good for the environment. Digital libraries can help long-term sustainability goals by merging environmental concerns with new technology. The results show that using eco-friendly infrastructure not only lowers carbon footprints, but it also makes users more engaged, operations more efficient, and knowledge sharing easier in an academic environment that is becoming more digital and aware of the environment.

Key words: *Sustainable Development, Eco-Friendly Infrastructure, Digital Libraries, Green Technology, User-Centric Design.*