During my internship, I was tasked with reworking the packaging for a product to make it sustainable while maintaining its impact resistance. This challenge required balancing the sustainability of materials with the practical demands of the packaging's performance. The experience offered valuable insights into the complexities of integrating sustainable practices into engineering design, particularly in ensuring that solutions meet both environmental and functional requirements.

The decision to use sustainable materials was affirmed by Dowling et al., who state that "engineers have a responsibility to develop solutions that are not only technically viable but also socially and environmentally responsible." However, the greatest difficulty lay in maintaining a balance between cost, sustainability, and effectiveness. The most sustainable packaging materials often proved either ineffective in impact tests or prohibitively expensive. Had sustainability been prioritized from the beginning of the project, rather than being addressed after production started, a more suitable budget allocation could have been provided, aligning with the principles highlighted by Dowling et al.

This experience has broadened my understanding of sustainable engineering, reinforcing the importance of integrating sustainability into the design process from the outset. The principles I applied in this project can be extended to other engineering challenges, emphasizing the need for a holistic approach that considers both functionality and environmental impact. This reflection has underscored the significance of designing solutions that are not only effective but also sustainable, ensuring a positive contribution to both the environment and society.