Project Title:	Design of a Scissor Lift Transfer System
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Area:	Mechanical Engineering
Sponsor:	Steel Dynamics Inc.

Steel Dynamics Inc. (SDI) is one of the largest steel producers and metal recyclers in the United States. SDI is seeking a safe and reliable solution to transition a scissor lift from floor level onto an existing elevated walkway while maintaining compliance with space, safety, and operational constraints. Currently, no solution exists at the facility that will allow the lift to traverse the required elevation. SDI is seeking assistance in developing an optimized transfer system to allow their scissor lift to reach the required elevation.

The transportation system will meet certain requirements. It must raise the scissor lift 160.5 cm and be compatible with the elevated walkway. The design must fit within 152.5 cm x 340 cm rectangular space, without interfering with equipment or foot traffic, and must be able to lift a JLG ES2646 and its maximum load for a combined 6000 lb. The JLG ES2646 has the dimensions of 117 cm x 250 cm. Because of the steel mill environment, it must be robust enough to withstand daily use in harsh conditions. Both hydraulic and electrical power sources are available for use, allowing either a hydraulic actuator or an electric motor. The design will prioritize space efficiency, safety, and ease of use, while being custom-built for the location. The structural components will be durable under heavy loading and potential impact. The design will comply with OSHA safety standards, including platform and lifting requirements. The project budget is $20000, with potential additional funds being allocated at the discretion of SDI. Development and manufacturing must be completed within two academic semesters.