Abstract

GTA WoodWorks is a community woodworking makerspace in North York that manages displaced Robertson screws after fabrication processes. These screws are currently stored in a plastic box mixed with scrap materials and unidentified of their types. Manual effort required to reclaim and sort them for reuse is a burden, resulting in workflow delays and repurchasing of materials. The owner, Mr. Ginsberg, has identified the need for a method for reclaim and reuse of displaced Robertson screws that minimizes manual effort.

This presents an engineering design opportunity requiring analysis, measurable evaluations and intentional designing for usability and integration with the existing workspace. Variety in screw length, head shape and condition (corrosion) introduces a need for classification that must be addressed under spatial and operational constraints.

This RFP presents context about *GTA WoodWorks*, authoring team position, relevant stakeholders, frames the opportunity with Needs-Goals-Objectives (NGO) framework, as well as an analysis on several reference designs. The NGOs define measurable criteria related to classification, minimizing manual effort, usability and safe integration. The scope excludes modifications of workshop infrastructure and operation, and is bounded by the feasibility for a responding team of first-year Engineering Science students.