

Abstract

This request for proposal addresses the physical strength barriers that Toronto Beekeepers Collective (TBC) members face in beekeeping practices. Our interviews with TBC members and site visits have revealed that participating in the TBC's current beekeeping system requires excessive physical force. Activities like cleaning hives and extracting honey from supers may overexert aging TBC members, reducing the accessibility of beekeeping to community members. Thus, this opportunity shall be addressed with an improved system, consisting of a beehive, methods, and tools, for the members to continue beekeeping with less physical effort.

Although the Langstroth hive used in TBC's current system is an industry-approved standard, its vertically stacked boxes make inspections difficult due to its weight. In contrast, their attempt with the horizontal Top Bar hive reduced the heavy lifting but compromised the ventilation and insulation of the hive. Existing solutions to the issue of accessibility such as the Flow hive, which allows for honey extraction without opening or moving the beehive, and a forklift contain limitations regarding community values and colony well-being.

The lived experiences of members of TBC, along with all other secondary research, shape the defining features of a successful solution. First and foremost, the objective of physical strength ensures that the beekeeping system does not require excessive force from TBC members. At the same time, our primary research reveals that the TBC's top priorities are bee health and bee education, making bees a critical stakeholder. As such, the document mandates requirements on temperature, ventilation, and maximum allowable light and sound intensity to foster a suitable environment for bees and evaluation criteria to make the bees visible to users. Finally, a core value of the TBC members is to use non-synthetic materials for all their processes except their honeycomb frames, informing our requirements on materials. While honey production helps fund the community, it is considered secondary to education, so honey production was not reflected as a requirement but solely an evaluation criterion.

Our team believes that bees are a fundamental part of our ecosystem, aligning with the TBC's mission of learning, educating, and preserving bees across Toronto. While framing the opportunity, our team tried our best to mitigate any sources of bias to allow for a flexible design space. Addressing this opportunity will allow the Toronto Beekeepers Collective to foster a more inclusive environment for people of all physical abilities.