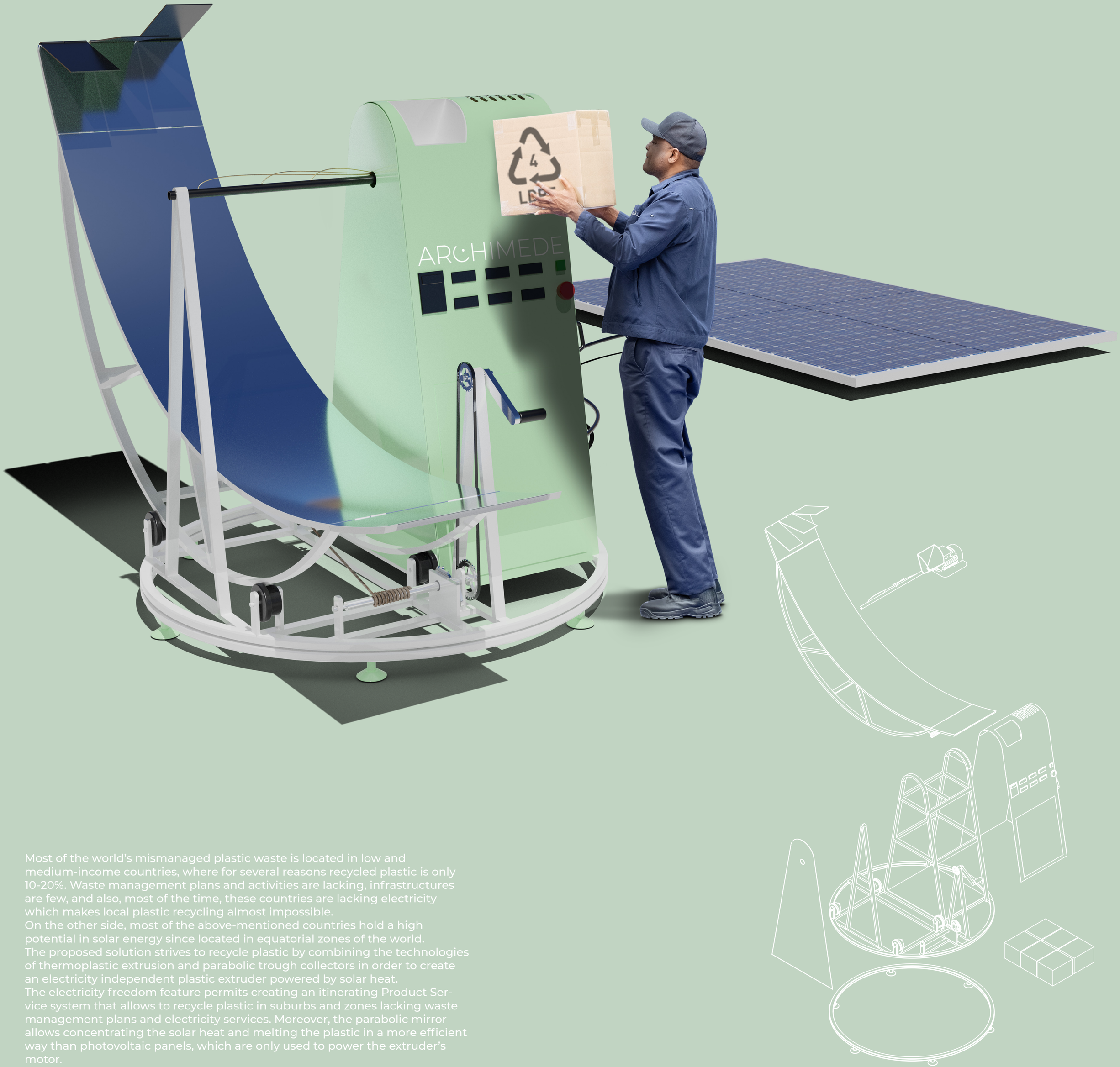
ARCHIMEDE

Research and design of a direct solar heated thermoplastic extruder for Ulundi Local Municipality.



Most of the world's mismanaged plastic waste is located in low and medium-income countries, where for several reasons recycled plastic is only 10-20%. Waste management plans and activities are lacking, infrastructures are few, and also, most of the time, these countries are lacking electricity which makes local plastic recycling almost impossible.
On the other side, most of the above-mentioned countries hold a high potential in solar energy since located in equatorial zones of the world.
The proposed solution strives to recycle plastic by combining the technologies of thermoplastic extrusion and parabolic trough collectors in order to create an electricity independent plastic extruder powered by solar heat.
The electricity freedom feature permits creating an itinerating Product Service system that allows to recycle plastic in suburbs and zones lacking waste management plans and electricity services. Moreover, the parabolic mirror allows concentrating the solar heat and melting the plastic in a more efficient way than photovoltaic panels, which are only used to power the extruder's motor.

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Archimede, Research and Design of a direct solar heated thermoplastic extruder for Ulundi Local Municipality.

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