ABSTRACT/SUMMARY

Post-processing of Community Led Energy Audit Thermal Imaginary

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The imperative shift towards achieving net-zero energy consumption demands a nuanced understanding of local energy dynamics and active community engagement. In Georgetown, Prince Edward Island, Canada, a pioneering research effort has been launched to employ a community-led approach to data collection to develop a baseline bottom-up neighborhood energy model. Residents, businesses, and building owners are encouraged to voluntarily participate, utilizing tools such as infrared thermal cameras, hygrometers, and questionnaires to gather critical data on building insulation, heating, hot water, and equipment usage. Leveraging thermal imaging will enhance CFD simulations, expediting the prediction of the present thermophysical attributes of Georgetown's structures. The extracted information then will be integrated into superior energy models to measure hourly demand profiles and optimize energy utilization at the same time as lowering environmental footprints. Collaboration with governmental corporations and domain professionals will ensure the validation and contextualization of findings. This research offers practical guidance for policymakers, urban planners, and owners in search of to decorate energy performance and sustainability in buildings. Through this collaborative technique, insights into Georgetown's energy landscape, renewable energy capacity, and sustainability-demanding situations are anticipated, guiding the development of tailor-made techniques for transitioning toward net-zero energy status.

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