URBAN ASSEMBLAGE: THE CITY AS ARCHITECTURE, MEDIA, AI AND BIG DATA.

• Paper / Proposal Title:
Forms of Sentience and Future Cities

• Author(s) Name:
Douglas Brock and Stanislav Roudavski

• University or Company Affiliation:
The University of Melbourne

• Abstract (300 words):
Visions of future cities differ greatly. Techno-optimists imagine greater comfort, better health, and longer lives. By contrast environmentalists foresee extinctions and the twilight of consumer civilisations. Whatever the outcome, the technological acceleration will continue to affect the lives of city dwellers, human and nonhuman. This situation calls for further research into capabilities for just resilience in the context of inclusive, more-than-human communities. The approach of this paper is to review this challenge through the lens of sentience. Sentience is a contested concept that integrates ecological and technical concerns. Thus, its exploration can challenge existing anthropocentric frameworks and propose novel research directions. Existing discourse on sentience in humanities, engineering, and biological sciences is extensive but disjointed. This disunity results in the exclusion and disregard of sentient agents, existing and emerging. This is particularly apparent in the damaging anthropocentric bias of current design and engineering. In response, this paper considers the roles sentience in future cities. It hypothesises that an understanding of sentience as a more-than-human, relational, and distributed phenomenon can promote interspecies justice. To test this hypothesis, we
begin with an outline of biological sentience in humans, animals, and other lifeforms. We then compare biological sentience with forms technological sentience in robots and intelligent devices. The last steps of our analysis explore how these forms of sentience can combine in the context of smart cities and discuss implications for human and nonhuman stakeholders. Using project examples, we compare existing conditions, within emerging trends, and long-term forecasts. The outcomes of this review emphasise the importance of ecocentric foundation for further research into nonhuman lives and interspecies communities. Further study of interspecies communities is important as a source of learning about nonhuman subjectivity, cognition, sentience, intelligence, and knowledge that will be crucially important as contributions to the necessary design of future cities.

- **Author(s) Biography (200 words each):**

**Doug Brock**'s work focuses on architecture, technology, ecology, ethics and design. His interests include design thinking; speculative architecture; complexity; digital design; architectural theory; vernacular architecture; and ethical design practices. A collaborator at the Deep Design Lab, he currently works in architectural practice at Sheppard Robson in London.

**Stanislav Roudavski**'s work explores issues of more-than-human design. His research engages with philosophies of ecology, technology, design and architecture; creative computing; self-organization; and place-making. His work has been disseminated through multiple publications and exhibitions. He leads the Deep Design Lab and is an academic at the University of Melbourne.