



Delft University of Technology

Doughnut-Architecture

The Doughnut Economic approach in Architecture

Medici, P.; Cavallo, R.; van Bennekom, H.A.

Publication date

2023

Document Version

Final published version

Published in

Collaboration for impact

Citation (APA)

Medici, P., Cavallo, R., & van Bennekom, H. A. (2023). Doughnut-Architecture: The Doughnut Economic approach in Architecture. *Collaboration for impact*, 76-77.

Important note

To cite this publication, please use the final published version (if applicable).
Please check the document version above.

Copyright

Other than for strictly personal use, it is not permitted to download, forward or distribute the text or part of it, without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license such as Creative Commons.

Takedown policy

Please contact us and provide details if you believe this document breaches copyrights.
We will remove access to the work immediately and investigate your claim.

Collaboration for impact



Powered by

Collaboration for Impact is a magazine developed by Network Applied Design Research – NADR, in cooperation with the GoCI programme of CLICKNL and Taskforce for Applied Research SIA. It was presented during the Dutch Design Week, 22-30 October in Eindhoven.

All authors of Collaboration for Impact:

Iris Andriessen, María F. Arias Arias, Serdar Asut, Michelle Baggerman, Kim van den Belt, Henri van Bennekom, Karin van Beurden, M. van Beuzekom, Christopher Bierach, Liesbeth Bonekamp, Stefanie Bonte, Roberto Cavallo, Alexsander Coelho, Paul Copini, Anke Coumans, Marcel Crul, Maxime Cunin, Maéva Dang, Michel van Dartel, Mathieu Decuyper, Jeroen van den Eijnde, Jeroen van Erp, Krispijn Faddegón, Jan Ferrer i Picó, Erik Goselink, Richard Gosselink, Maaïke Harbers, Rob van Haren, Tiwánée van der Horst, Erik Jansen, Tomasz Jaśkiewicz, Peter Joore, Carlijn Kappers, Joshua Kelly, Noortje Kessels, Ulrich Knaack, Eva Koopmans, Eef Lamers, Wylske Lankester, Thomas Liebrand, Machteld van Lieshout, Niels van Maaren, Piero Medici, Sander Meert, Catelijne van Middelkoop, Maarten Mulder, Jakob Noren, Judith Ogink, Inge Oskam, Jessica den Outer, Anja Overdiek, Kim Poldner, L. Rabbinge Susan Ras, Reint-Jan Renes, Mariëlle Rosendaal, Paul de Ruiter, Silvia Russel, Ute Sass-Klaassen, Wendy Scholtes-Bos, Renee Schuffelers, Ingrid Schuffelers, Wina Smeenk, Bert Smit, Iskander Smit, Alice Smits, Yagiz Soylev, Janienke Sturm, Frank Suurenbroek, Wouter Swenneker, Jos Thalen, Jorrit Thijn, Manuela Triggianese, Peter Troxler, Koen van Turnhout, Michela Turrin, Jan van de Venis, Elmo Vermijs, Karin Voortman, Sanne I. de Vries, Jessika Weber Sabil, Antien Zuidberg

NADR:

Karin van Beurden (Saxion)
Wina Smeenk (Inholland)

Program GoCI, an initiative of Taskforce Applied Research SIA and CLICKNL:

Mieke Dols
Johannes van der Vos

Magazine Editors:

Bert Smit (Breda University of Applied Sciences)
Marieke Zielhuis (Hogeschool Utrecht)

Magazine Production:

Jens Gijbels, Noortje Braaksma (Fundamentals Academy),
Feike Bergervoet, Adriaan de Bruin (Fungi Design)

Exhibition Curators:

Catelijne van Middelkoop (St. Lucas)
Anja Overdiek (Hogeschool Rotterdam)

Publisher:

Network Applied Design Research

Date:

1 March 2023

ISBN:

9789491589324



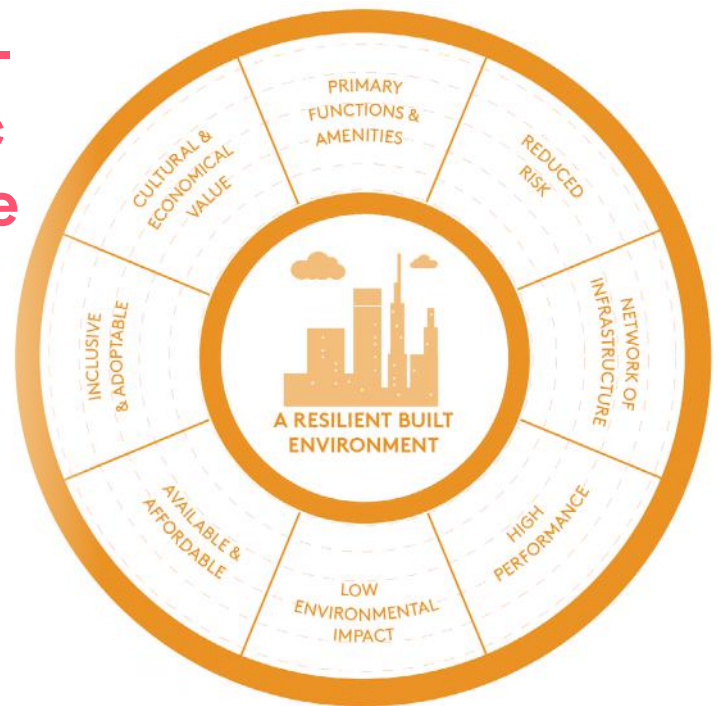
Doughnut-Architecture - The Doughnut Economic approach in Architecture

people

organizations

In 2017, Professor Kate Raworth from Oxford University and Amsterdam University published the book “Doughnut Economics: seven ways to think like a 21st century economist”. The Doughnut, the core concept at the heart of Doughnut Economics (DE), is a tool for human prosperity in the 21st century to meet the needs of all people within the means of the living planet. It consists of two concentric rings, a social foundation and an ecological ceiling, and in between lies a doughnut-shaped space, the safe and just space where humanity can thrive¹.

In 2018, at the Faculty of Architecture TU Delft (BK), Henri Van Bennekom supervised the graduation projects of four students² who developed the AREA-Framework, a tool to guide the design interventions in the built environment, addressing DE. In Raworth's doughnut-shaped space, the AREA Framework introduced eight qualitative categories (and subcategories³) to address a resilient built environment. From 2019 until 2021, Van Bennekom adopted the AREA Framework in the AREA Design Studio at BK, TU Delft. Most involved researchers, practitioners, and students' feedback highlighted its limitations of being only qualitative, and its categories and subcategories being not sufficiently quantitative and measurable.



In 2020, several architectural practices from the Ex'tax network⁴, (e.g. RAU Architects, City Foerster, Superuse Studios, Space & Matter) involved in the TU Delft project 'Circularcity'⁵ expressed the need for guidelines and toolkits to address the Circular Economy (CE) challenges comprehensively. Space & Matter proposed to develop a research, specifically focused on a tool similar to the AREA Framework, reckoning that DE is part of the Amsterdam policy to achieve a fully circular city by 2050⁶; other practices from the Ex'tax network agreed on its importance. The following research question originated from the practices involved in Circularcity: “How to develop a tool similar to the AREA Framework further, from a quantitative and qualitative perspective, to support the architectural practices to implement DE in the built environment?”

The ultimate goal is to develop the Framework further, to increase the number of architectural practices successfully implementing the Doughnut Economics in the built environment at a national level. The Framework will contribute to positioning the architectural practices concerning DE and the CE. The project results are firstly an online open-access publication about the further developed Framework to be applied by architects; secondly, the preparation and submission of a follow-up research proposal about the extended development and implementation of the Framework applicable to the built environment by the Ex'tax construction sector companies.

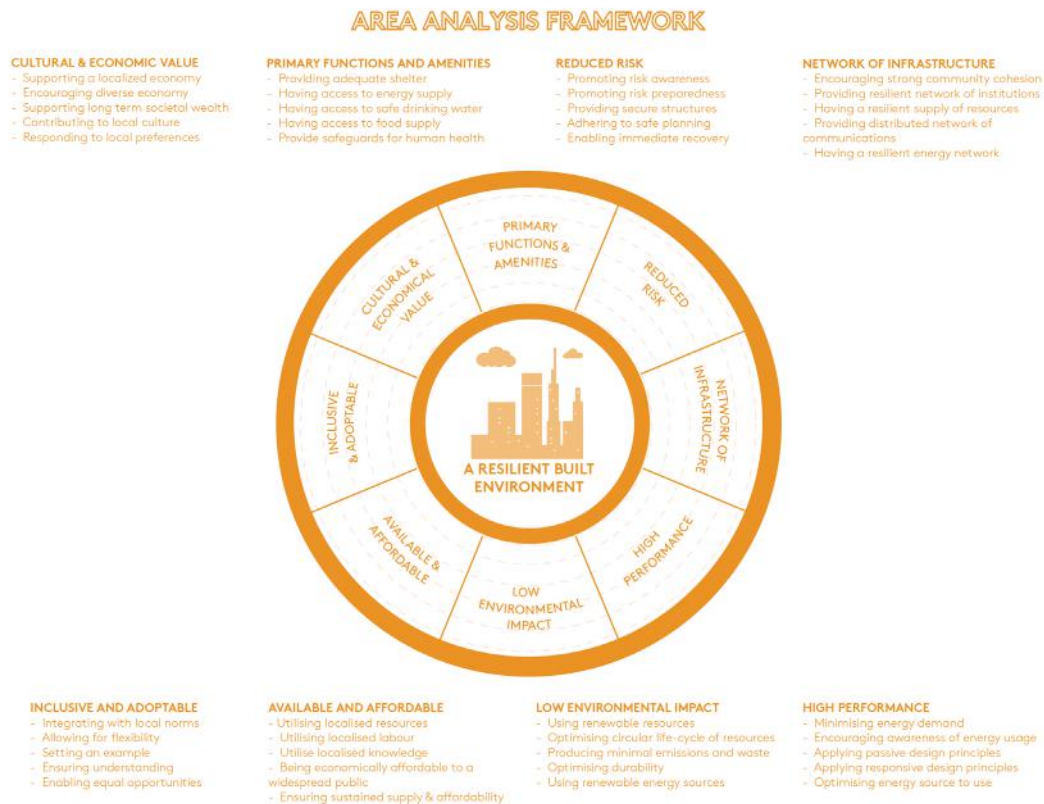
The research method consists of testing the Framework through practice, education, and research, a cyclical process in which the first test in practice and education will further develop the following research phase.

Space & Matter will be the first practice to test the Framework on real projects; they are already acknowledged about applying principles regarding the Doughnut Economics on the built environment. It will be essential to apprehend which aspects of the Framework are particularly beneficial for real projects, unlock its potential, and assess its limitations in the four phases of analysis, design, construction and use⁷. After Space & Matter, a few other practices from the Ex'tax network, starting with Superuse Studios, will test the Framework on real projects.

Several architectural practices from the existing strong Ex'tax network, reinforced through a solid collaboration with an academic institution, will contribute through tests on real projects and workshops to further develop and implement the AREA Framework and create consortia to develop a follow-up application for a major EU research funding. Workshops with the TU Delft interdepartmental research group Circular Built Environment Hub8, the Amsterdam Donut Coalitie9, Kate Raworth10, will be organized to receive advice about the AREA Framework design method and further development. The AREA Framework will also be tested in

education in Architecture, Architectural Engineering and Industrial Ecology academic courses, with SMEs and TU Delft leading, peer-reviewing and collecting feedback from students' work.

Testing the AREA Framework, especially on real projects, will be crucial; filling the gap between science and the real world is challenging and breaking through the trajectory leading to innovation.



Colofon

Project:

TU Delft
GoC

Authors:

Piero Medici
Roberto Cavallo
Henri van Bennekom

Contact:

Piero Medici
P.Medici@tudelft.nl

Partners:

Delft University of Technology
Space & Matter
Superuse Studios

Literature

1. See also: here
2. Charlotte Uiterwaal, Isabella van der Griend, Ryan McGaffney, Karolina Bäckman
3. AREA-Framework has five subcategories for each of the eight category, see also: here
4. See also: here
5. See also: here
6. See also how the Doughnut Economics is part of the Circular Economy policy of Amsterdam: here
7. These are the four phases defined by the AREA-Framework to analyse projects.
8. See also: here
9. The 'Amsterdam Donut Coalitie' mission is to connect local change agents, to make joint efforts visible, and thus help the region of Amsterdam to implement Doughnut Economics, working towards a society with a fair, social basis for everyone within safe ecological limits.
10. ADC and KW will participate as advisors in the research project by sharing their current research agenda in WP1, WP5