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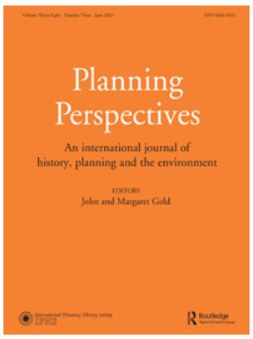

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Critical cartographies for assessing and designing with planning legacies: the case of Jaap Bakema's Open Society in 't Hool, the Netherlands

Juan Sanz Oliver [a], Gregory Bracken [b] and Víctor Muñoz Sanz [c]

[a]Faculty of Architecture and Built Environment, TU Delft, Netherlands; [b]Department of Urbanism, Section of Spatial Planning & Strategy, TU Delft, Delft, Netherlands; [c]Department of Urbanism, Section of Urban Design, TU Delft, Delft, Netherlands

ABSTRACT

The Open Society appeared as a concept in planning discourse at the Congrès International d'Architecture Moderne (CIAM XI). It attempted to create urban conditions which would allow society to prosper. Despite its good theoretical intentions, the project did not always translate well into practice. We observe that historic approaches and tools have tended to be neglected in urban regeneration projects and discussions, yet we think that they can bring valuable urban transformations. This paper therefore considers the extent to which historic planning tools and theories can be useful for assessing built projects to provide fresh approaches for urban renovation. This paper will reappraise the concept of the Open Society empirically by analysing, critiquing, and imagining its relevance in twenty-first-century planning projects and discourse. This research uses a mostly qualitative approach through critical cartographies as a main medium and to draw conclusions that highlight the power relations in the Dutch neighbourhood of 't Hool (Eindhoven) as well as the local conditions and materials that can enable them to plan for a more resilient future. We aim to bridge the gap between theory and practice through a methodology that allows for a broader and deeper understanding of place, history, potentials, and urgencies.

KEYWORDS

Jaap Bakema; Open Society; 'T Hool (the Netherlands); critical cartographies; modernist planning legacy

Introduction

The Open Society was a concept introduced at the Congrès International d'Architecture Moderne (CIAM XI) in the late 1950s by the Dutch architect, Jaap Bakema (1914–1981). Summarized in 64 principles, it was an attempt to create conditions that would enable cities and societies to prosper.[1] These good intentions did not always translate into success in practice as they sometimes led to conditions of urban decay and even eventual demolition.[2] However, some of their shortcomings are still felt today, amplified by multiple crises (social, economic, environmental, etc.). Yet, the

CONTACT Gregory Bracken g.bracken@tudelft.nl

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[1]Van den Heuvel, *Jaap Bakema and the Open Society*, 18–19.

[2]Mark Brown, "V&A Acquires Segment of Robin Hood Gardens Council Estate." *The Guardian*, November 9, 2017. Accessed October 21, 2022. https://www.theguardian.com/artanddesign/2017/nov/09/va-buys-three-storey-chunk-robin-hood-gardens-council-estate-alison-peter-smithson-brutalist-architecture.

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basic aims were good intentions which still have value today when properly appraised. Historic planning approaches have tended to be side-lined in some of the debates around modernisation and renovation, yet we feel that these approaches also have value, which led us to our research question: To what extent can historic planning tools and theories be useful for assessing built projects to provide fresh approaches for urban renovation in the twenty-first century?

In this paper, we examine inhabitants' needs and their engagement with different types of housing and public space, as well as how the gradient between public and private is facilitated by spatial form.[3] Our approach has been mainly qualitative[4] and uses one of five critical and sensible cartographies (History, among others[5]) to question the continuing validity of Bakema's principles for an Open Society,[6] because by updating Bakema's legacy we can encourage urban resilience. The paper begins with an outline of the theoretical and analytical framework of critical cartographies, followed by a methodology section which highlights drawing, mapping, and use of archive material methods. We then describe the case study of the 't Hool neighbourhood of Eindhoven in the Netherlands before going into a detailed analysis using some of Bakema's Open Society principles through the lens of our History critical cartography. We then present our results and conclude.

Theoretical-analytical framework

Critical cartography originated in Critical Theory, a concept and methodology promoted by the Frankfurt School focussing on reflection and the criticism of assumptions. They also encouraged the use of analytical tools to free us from power-knowledge relations and power structures (such as capitalism) and develop meaningful experiences and independent thought while also embracing creativity and emancipation.[7] As Jeremy W. Crampton says, 'he purpose of critique as the politics of knowledge is not to say that our knowledge is not true, but that the truth of knowledge is established in conditions that have a lot to do with power'.[8] Michel Foucault proposed a deep analysis of historical conditions to see how knowledge is made possible.[9] He explored how knowledge is stabilized and enabled through geographically located power relations. Spatial conditions can be cartographically represented and, as Crampton notes, historical emphasis is also part of cartographic criticism.[10]

Brian Harley's epistemological rupture of cartography (developed by others, especially Crampton and James Corner) led to an understanding that the legitimacy of a map is relative, not a direct or immediate representation of a territory. In other words, '[c]artography has never been an autonomous and hermetic way of knowing, nor has it ever been above the politics of knowledge. My key metaphor is that we should begin to deconstruct the map by challenging its supposed autonomy as a mode of representation'.[11] On this basis, Crampton defines maps as social constructions.[12] However, Andreas Faludi argues that what distinguishes planning from other political fields is its focus

[3]Risselada, *Team 10: In Search of a Utopia of the Present*, 170.
[4]Note: in specific cases we have used quantitative methods.
[5]Due to spatial constrains, the focus of this paper describes the main medium (critical cartographies) of our full methodology while selecting one case study and one specific topic from the five (History cartography).
[6]The 64 principles of the Open Society were published as a fictitious interview in *Wonen* magazine in 1971; based on Bakema's criteria list, they had been developed based on conversations within Team 10 and were published by the Smithsons in *Forum* magazine between 1959 and 1967, see van den Heuvel, *Jaap Bakema and the Open Society*.
[7]Crampton, "Introduction to Critical Cartography," 14.
[8]Crampton, "Introduction to Critical Cartography," 15.
[9]Foucault, *Arqueología del saber*, 183.
[10]Crampton, "Introduction to Critical Cartography," 15.
[11]Crampton, "Maps as Social Constructions," 240 (Harley cited in Crampton).
[12]Zonneveld, "Visual Storytelling," 220.

on spatial arrangements and activity patterns and that the best means of spatial representation is a plan or map.[13]

Mapping usually precedes the planning process. A map objectively identifies characteristics and spatial conditions which a project can then rationally develop, evaluate, and build.[14] However, as Corner points out, most designers and planners consider cartography a rather unimaginative analytical practice. He advocates for more creative mapping processes: 'mapping is never neutral, passive or without consequence; on the contrary, mapping is perhaps the most formative and creative act of any design process, first revealing and then staging the conditions for the emergence of new realities'.[15] It is this approach of speculation, criticism, and invention that guides our investigations.

Critical mapping has an ambivalent function because, as Wil Zonneveld explains, it is analytical and projective at the same time.[16] It acts as part of the design strategy and does not have the exclusive function of creating possible or desired futures. It can also study and define the spatial structures of a region or show how a project is positioned in relation to a particular place and its broader environment. As Corner puts it, '[t]he function of mapping is less to reflect reality than to engender the reshaping of the worlds in which people live'.[17] Thus, mapping is partly subjective and partly objective, falling between the reality of a territory and its new imaginings. We will use this understanding of cartographies as an analytical and design tool in our research.

In our explorations, we put emphasis on the reflective action of the professionals and slow thinking process which allows us to reflect qualitatively. Thus, drawing by hand (literally, holding a pencil[18]), is an intense experience that brings the designer/artist closer to the design object in a state of 'reflexive conversation with the situation'.[19] In addition to this intense hand-mind relationship we find resonances with Ricardo Flores and Eva Prats' approach to the archiving of ideas by superimposing and accumulating tracing paper which allows us to reflect, detect doubts, and identify points of greatest tension in a project. It is possible to trace the development of ideas and understand a complete project, not as a representation of a specific thought but as a possibility for research and communication.[20] The visual language of the map and the verbal language that surrounds it come together in cartographic representation (legend, plans, sections, perspectives, texts, and annotations) to display multiple dimensions, connections, and complexity. One crucial element is the legend which details the meaning of signs used on the map,[21] which we will describe in a moment.

Methods

We use a combined critical mapping approach (hand-drawn and digital drawings) to visualize and contrast empirical results based on the case study of 't Hool using Bakema's 64 principles. These critical cartographies were conceived to be used for evaluation and may have subsequent use in design strategies. Due to spatial constraints, we will only discuss one of these cartographies, History, but Table 1 contains an overview of all the five cartographies.

[13]Faludi, "Framing with Images," 96.
[14]Scott, *Seeing Like a State*, 36–52.
[15]Corner, "The Agency of Mapping," 89.
[16]Zonneveld, "Visual Storytelling," 219.
[17]Corner, "The Agency of Mapping," 89.
[18]Palmboom, *Ijsselmeer: A Spatial Perspective*, 323–327.
[19]Schön, *The Reflexive Practitioner*, 95.
[20]Flores and Prats, *Pensando a Mando*, 138.
[21]Zonneveld, "Visual Storytelling," 219.

Table 1. Sequence of layers for each topic and critical cartography. Source: Made by authors.

	History	Geography-Ecology	Socio-Economic	Form, Scale (Density), Matter	Technology-Network
Layer 1	The relevant historical elements of the 't Hool proposal	Open space (grass) public use and accessible	Local functions and activities	Types Block (Block configuration)	Digital connections
Layer 2	Existing historical fragments of the city (Corboz, 1983)	Open space (grass) community use and accessible	Large functional area (services, production, etc.)	Main squares (Cullen, 1961)	Physical space-activity (posted online)
Layer 3	The relevant buildings of the 't Hool project	Open space, community use and not accessible	Education and knowledge centres catchment areas	Axis squares (Cullen, 1961)	Bus line
Layer 4	The public spaces of articulation between the project and the immediate environment (context)	Open space (semi-green) private use and accessible	Health, sports, take care centres catchment areas	Local squares (Cullen, 1961)	Bus stops
Layer 5	Group identity centres (Cullen, 1961)	Open space (garden) private use and not accessible	Main public space	Space syntax High integration (van Es, Yamu, 2021)	Public transport catchment areas
Layer 6	The centres of identity of the blocks (Palmboom, 2018)	Community and public green perimeter	Urban fronts to public space (urban structure)	Space syntax Medium integration (van Es, Yamu, 2021)	Main road
Layer 7	The fronts of the civic axes (van Es, Yamu, 2021; Palmboom, 2018)	Private green perimeter	Type high rise block-tower (apartments, high density) (A + T density series, 2016)	Urban fronts (civic structure) (Esteban i Noguera, 1988)	Secondary road
Layer 8	The historical plots erased (removed) (Corboz, 1983)	Activity areas	Type mid-rise block (row housing-middle density)	The perimeter of the 't Hool complex (Place-group-block-type)	Pedestrian path
Layer 9	The perimeter of the 't Hool complex (Place-group-block-type)	Water city system	Type low-rise block (patio house and detach housing-low density)	Soft surface (public collective)	Active Urban centre
Layer 10	The visual sequences A and B (Cullen, 1961)	Topography	Owned property	Soft surface (gardens)	Green urban areas
Layer 11		Plots Owned property	Rental property	Hard surfaces (paves, bricks, etc.)	Energy lines
Layer 12		Plots Rental property	The perimeter of the 't Hool complex (Place-group-block-type)	The visual sequences A and B (Cullen, 1961)	The visual sequences A and B (Cullen, 1961)
Layer 13		The perimeter of the 't Hool complex (Place-group-block-type)	The visual sequences A and B (Cullen, 1961)		
Layer 14		The visual sequences A and B (Cullen, 1961)			

This research uses mostly qualitative methods[22] to critically map the case study and highlight the knowledge-power relations that allow us to spatially explore the Open Society as well as reveal latent blockages (which we identify as 'urgencies') to be addressed. We also seek to identify the materials available for building a resilient future for these places (by identifying what we call 'potentials'). In this way, we attempt to bridge the theory-practice gap by providing a methodology that provides a broad and deep understanding of these places and their histories.

Our framework for assessing the case study contrasts Bakema's 64 principles (see appendix 1) with our own empirical fieldwork. For analytical clarity, we cluster the principles into different topics (using those outlined by Team 10[23]), namely Identity, Association, Cluster, and Mobility.[24] We then filter (and reduce) the number of principles by discarding those that no longer address the needs, demands, or desires of contemporary society (and some that are overtly philosophical questions and hence difficult to spatialise).[25] Once this first filter is complete, we then organise the topics under headings of History; Geography and Ecology; Socio-economics; Form, Scale (density), Matter; and Technology and Networks. We then relate these to today's global and local urban discourses and policies and to some site-specific behaviours. Next we bring these into discussion with a series of critical cartographies that allow us to visualise the spatial patterns in relation to the discourse and help us elucidate the current urgencies and potentials within the site.

We utilise this new formulation of the 64 principles as an assessment framework for empirical revision, as well as to allow the principles to act as a method of inspiration and guidance to the proposed designs and processes. The assessment framework is intended to be holistic, meaning that different topics of interest, and different perspectives, will enable a more multidisciplinary attitude when approaching these complex urban phenomena.

Case study: 't Hool

'T Hool, located in the Woensel district of Eindhoven, in the Netherlands, was designed by van den Broek and Bakema, Jan Stokla, and Gerard Laus between 1968 and 1972[26] (see Figures 1 and 2). Initiated in cooperation with Huis-en-Wijk (founded by engineers of the company, Philips), the project forged alliances between public and private entities in response to the housing needs and desires of its cooperative and future residents. The project showcases twelve housing types with two types of tenure: privately owned and rented. 'T Hool embraces a rich diversity of lifestyles and allow us to explore the 'total space' Bakema sought in his Open Society.

The experimental character of 't Hool sets it apart from the usual development model of High Modernism as described by James C. Scott, with its standardization and repetition, and saw Bakema move away from the Athens Charter[27] and its social engineering to more positivistic principles dictated by how users actually live. This alternative to the conventional model materialised a new one promoting high diversity and inclusion. Bakema tried to achieve solidarity (or taking care of each

[22]Note: in specific cases we have used quantitative methods.

[23]Team 10 was a group formed by the young members from the different national groups within the CIAM congresses that challenge the positivistic and doctrinaire approach to urbanism of CIAM. The group was formed by a core group including Jaap Bakema, Peter and Alison Smithson, Aldo van Eyck, Shadrach Woods, George Candilis, Giancarlo de Carlo, while formed with other active peripheral individuals such as Ralph Erskine, Pancho Guedes, Matias Ungers, among many others.

[24]Van de Heuvel, Martens, Muñoz Sanz, *Ecology Thinking in Architecture*, 25.

[25]Note: it was revised with global discourses of UN SDG and local reports and information from the 't Hool Foundation.

[26]www.woonwijkhethool.nl/achtergrond/.

[27]The Athens Charter was a document published by the Swiss architect Le Corbusier in 1943 about modern architecture and urban planning. This work is grounded in Le Corbusier's Ville Radieuse (Radiant City) book of 1935 and urban studies undertaken by the Congrès International d'Architecture Moderne (CIAM IV) in 1933, which promoted The Functional City.

Figure 1. Aerial view of 't Hool within Woensel district. Source: Google Earth.

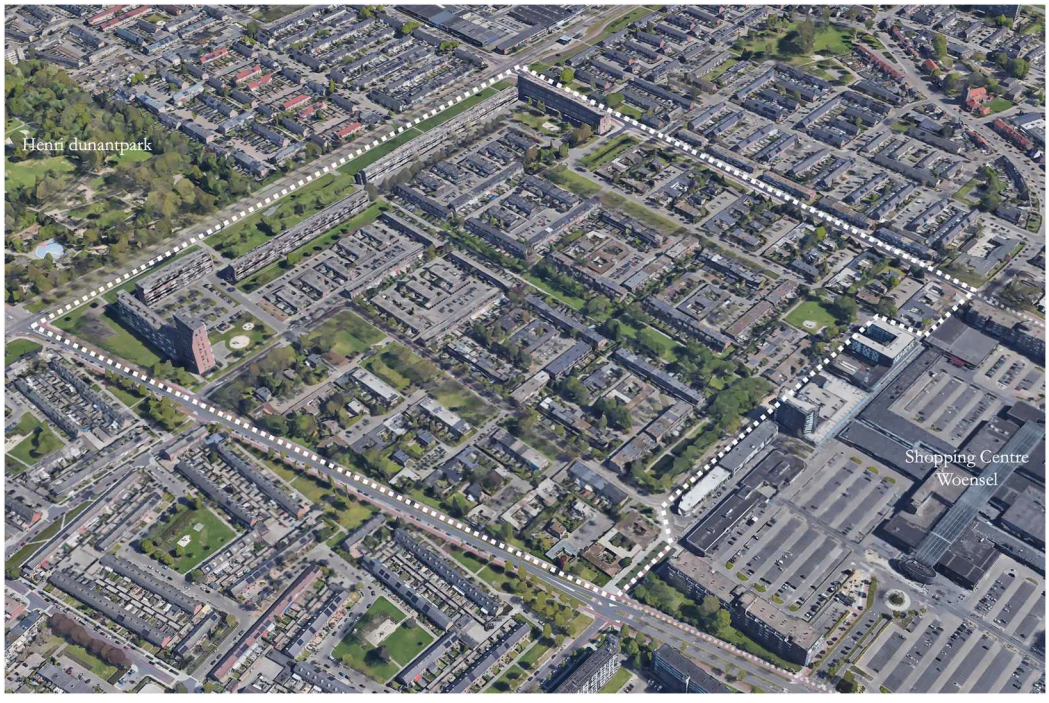

Figure 2. Bird's eye view of 't Hool close up of park and shopping centre. Source: Google Earth.

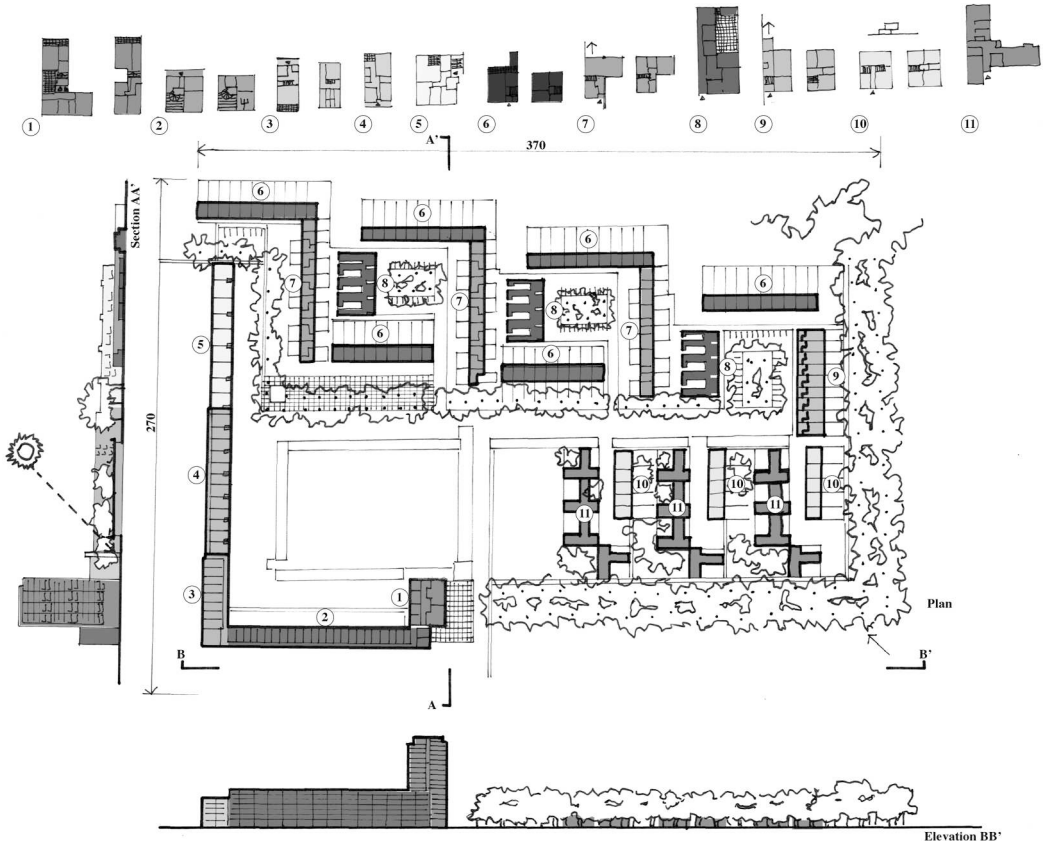

Figure 3. Group unit (Visual group) plan and twelve housing typologies as an abstract exercise. Source: Redrawn by authors based on original drawings 'Jaap Bakema and the Open Society' (HNI archive collection).

other) by providing a high typological diversity, which he saw as a sign of a healthy society, which he did by introducing experimental cases and distinctive and meaningful meeting spaces. The flexible configuration of the design allows for complex and multi-scalar social/identity relationships (see Figure 3) which respond to the inter-scalar and inter-relational dimensions of space explained by Bakema in *From the Chair to the City*[28] (1964). The transition of scales is achieved through intermediate spaces or 'thresholds' as discussed by Bakema, Aldo van Eyck, among others in Team 10 meetings. This intermediate element allows a mediation between public and private, generating spaces of transition and autonomy. This reciprocity within 't Hool is described by Aldo van Eyck as a landscape of relativity approached through a configurative discipline.

Team 10 saw the Open Society as fostering 'growth and change', where the capacity of domestic space can be extended or reduced according to the needs of the users. In this project, this is addressed through 'growing houses' (see Figure 4), which are destined as infrastructural support allowing for later extension and adaptation and reflects the behaviour of the inhabitants. This behavioural approach was discussed in the CIAM and Team 10 meetings, and we find similarities in terms of the understanding of this approach to built environments' organic patterns of growth

[28]Bakema, *Van stoel tot stad*, 76.

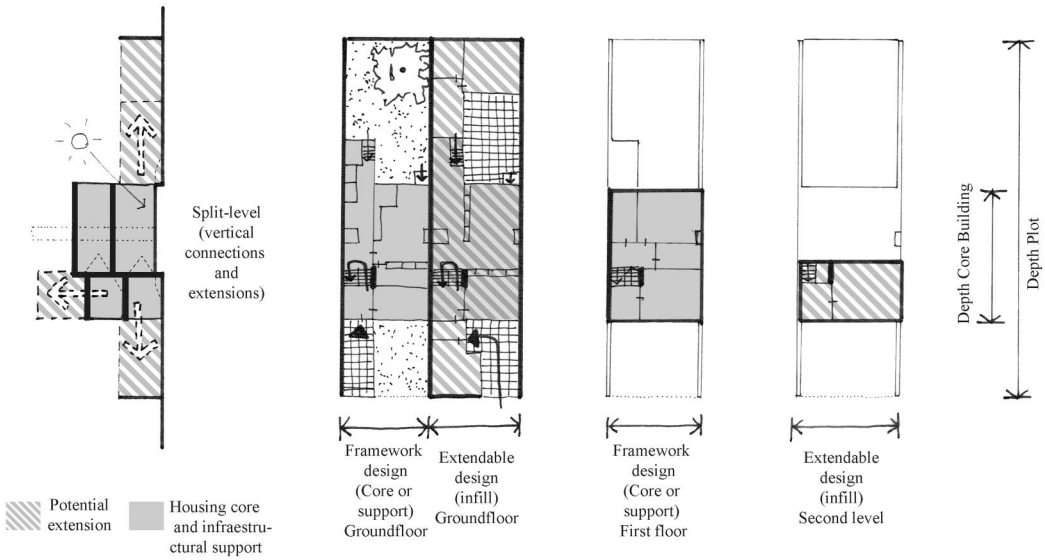

Figure 4. Growing houses concept and layout. Source: Redrawn by authors based on original drawings 'Jaap Bakema and the Open Society' (HNI archive collection).

and change with other coevals. The transformational 'behaviour' of form appears to be a 'living whole'.[29] However, Bakema's main concern was providing a human dimension centred around physical, emotional (social) and spiritual needs of inhabitants.[30] This project, which is protected as a national monument in the Netherlands, allows us to empirically measure Bakema's principles through our method of critical cartographies, to which we now turn.

Critical cartography: history

Due to spatial constraints, we will only go into detail about one of our five critical cartographies, namely, History (see Table 1 for an overview of all five cartographies). Such a historical cartography of the neighbourhood deploys relevant techniques and instruments selected from Bakema's 64 principles. Numbers 47 and 11 refer to the sensitive transposition of the proposal within its context by not demolishing and by taking care of existing elements and structures. For this we apply the methodology of reading the land as a palimpsest.[31] This technique helps us to reveal transformation processes over time, including scars, through visualization of the elements (permanent, added, removed, transformed[32]) using historical maps from 1930, 1970, and 2020. For Principles 7, 33, and 61, which refer to the experimental aspect of the proposal, involving future inhabitants in design decision-making, we study the design process through Faludi's method of the 'performance in spatial planning' (2000).[33] This helps us to evaluate the design process as well users' participation in it.

[29]Habraken, *Structure of the Ordinary*, 7.
[30]van den Heuvel, *Jaap Bakema and the Open Society*, 123.
[31]Corboz, *The Land as Palimpsest*, 12–34.
[32]Ibid.
[33]Faludi, "The Performance of Spatial Planning," 299–318.

Through a process of deconstruction, we see how the historical cartography describes the different layers of the project. These are listed in Table 1. We describe the following layers and spatial characteristics to build a new perspective (narrative) of the place and its history (we also provide sections and elevations in each cartography for greater spatial clarity):

(1) *The relevant historical elements of the 't Hool proposal*: a catalogue of things that represent the community, e.g. works of art, self-organized community programmes, signs explaining history, urban elements as social projects, etc. Compiled from site visit. Data source from the platform pdok (set: pand) 2020.
(2) *Existing historical fragments of the city*: permanent fragments detected as part of a palimpsest, e.g. organic traces of the city, small existing settlements, pre-existing green areas (forests), etc. Produced by examination of maps (1930, 1970, and 2020). Data from the platform pdok (set: pand, openruimte, weg), official documents[34], and *Historical Atlas of Eindhoven*.
(3) *The relevant buildings of the 't Hool project*: innovations and types of housing, especially in the north (long housing blocks with walkways) and the south (the shopping centre), also typologies designed to expand living space on both sides of the block. These experiments are implementations and test of the vanguard discussions of CIAM and Team 10. This layer has been produced with a historical archival of literature reference (Forum text, CIAM congress text, etc.) and cataloguing during the site visits and talks with residents. The data source used was open data from the platform pdok (set: pand) 2020 and personal data produced from the site visits.
(4) *The public spaces of articulation between the project and the immediate environment (context)*: main axes and context generated by fronts and open (public) space. Produced using historical maps and a morphological analysis of the urban structure. Data from the platform pdok (set: pand, open ruimte) 2020.
(5) *Group identity centres*: spaces configured through urban form (and space perception) of a set of 'block clusters' functioning as meeting/identity centre for neighbourhood activities that are equipped with programs for the community. Produced via a morphological analysis of type/block/group units. Compiled using archival study of CIAM and Team 10 identity configurations in urban form and observations during site visits. Data from the platform pdok (set: pand) 2020.
(6) *The centres of identity of the blocks*: spaces configured through urban form (and perception of space) of a 'block' that forms a neighbourhood unit that functions as a centre of identity for residents. Blocks are equipped with programmes for the community in the block. Produced using morphological analysis of the type/block/group units, archival study of CIAM and Team 10 identity configurations, and observations during site visits. Data from the platform pdok (set: pand) 2020.
(7) *The fronts of the civic axes*: facades that constitute an urban front, some have ground-floor activities or housing. Produced via morphological analysis of urban structure through a palimpsest analysis (using maps from 1930, 1970, and 2020). Data from the platform pdok (set: pand) 2020.
(8) *The historical plots eliminated*: here we see changes in parcelling and axes and how the project tries to articulate these with a more 'rational' layout. Produced via historical maps (1930, 1970, and 2020) and a noting of the fragments removed from the surroundings. Data from

[34] *Rijksdienst voor het Cultureel Erfgoed*, 2011.

the platform pdok (set: pand, openruimte, weg) 2020 and from official documents[35] and the book *Historical Atlas of Eindhoven*.

(9) *The perimeter of the 't Hool complex (Place-group-block-type)*: here the contour of each relationship scale is drawn (place is the outer contour, the group consists of two districts that make up the neighbourhood, the block is the neighbourhood groups, and the types are the housing units). Compiled using information on municipal boundaries, land use from City Hall open data, and refined using a methodological analysis of the configuration of urban form (type/block/group/place). Data from the platform pdok 2020.

(10) *The visual sequences A and B*: here selected routes are traced in the spatial sequence 'from the house to the city' exploring the relational character of the environment and the articulated transition between its different scales. Conducted using Gordon Cullens' cognitive approach to spatial patterns called serial vision[36], and adapted to the detection of 'Atmospheric intensity' points that allows us to extract spatial patterns (the visual sequence and atmospheres, cannot be addressed in this paper because of space constrains).

Results

'T Hool arose from the wishes of a group of Philips engineers dissatisfied with post-war mass housing models.[37] They created a cooperative (*Huis-en-Wijk* in Dutch) and generated alliances between public administrative bodies, and designers made it a new physical and symbolic centre of the district. This is mainly due to the approach adopted and the mastery shown in translating an abstract exercise (responding to the needs of the users) into a proposal fitted to the place (see Figure 5). The willingness of the various parties to cooperate led to a departure from the usual modernist housing and led to new values for common space. Bakema's willingness to experiment, by clustering different typologies around a centre and introducing new models (e.g. growing houses, split-levels, bridge buildings, etc.), saw innovative concepts adapted to everyday needs. This included the clustering of different typologies within blocks (Bakema also experimented with other spatial and technical aspects.).

A lack of user-centred design for governance and decision-making was one of the biggest critiques of modernism (particularly Jane Jacobs' defence of bottom-up approaches to urban development[38]). There was also a recognition of users' construction of place through inhabiting it, with the designers of 't Hool using modulated and flexible design.[39] The model was conceived to be adjusted by users according to their needs. Thus, the human-centred principles of design in 't Hool are crucial for the design proposal[40] and similar to the human-centred approach and principles of providing privacy through urban form which Cristopher Alexander and Sergei Chermayeff published in *Community and Privacy* (1963). Users also had a direct impact on decision-making in the design and distribution of homes, and were even able to modify the size of rooms.[41] All of these new configurations were designed for the user, and provided transitions from the smallest, most intimate spaces, where feelings of privacy are prioritized, to common spaces, thereby generating

[35] *Rijksdienst voor het Cultureel Erfgoed*, 2011.
[36] Cullen, *The Concise Townscape* (1961), 17–20 (serial vision).
[37] Abrahamse, Van Hooff, and Uitterhoeve, *Historical Atlas of Eindhoven*, 61.
[38] Jacobs, *Death and Life of Great American Cities*, 422–423.
[39] Bakema, *Van stoel tot stad*, 71–74.
[40] Risselada, *Team 10: In Search of a Utopia of the Present*, 170.
[41] www.woonwijkhethool.nl.

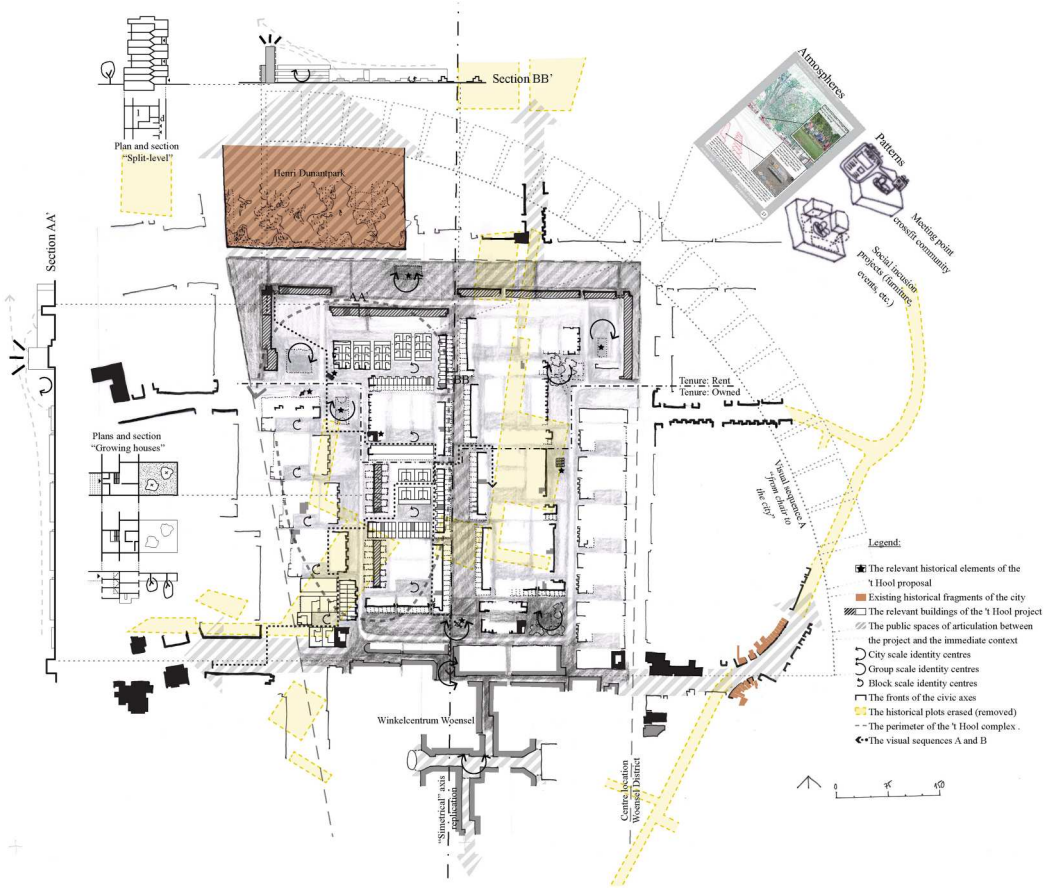

Figure 5. History cartography of 't Hool. Source: Authors' drawing based on Pdok and ICGC dataset (2021) and historical archived maps Visie Erfgoed en Ruimte (2011) Rijksdienst voor het Cultureel Erfgoed.

relationships and spontaneous encounters.[42] The configuration of visual groups (legibility of a cluster, morphological approach, visual relations for mobility and identification inside/outside of the group), the centrifugal configuration block, different typologies and variations, and access oriented to the centre,[43] generated a core social life reinforcing the sense of community (see Figure 5). Involvement during the processes of design and construction enables the community to eventually appropriate these places (not simply from an anthropological view but also from a political one). This enables the residents to exercise their right to use the city, and to transform it through their actions.[44] In other words, this allows them to exercise their 'right to the city' to improve and take care of the common good for making it more resilient.

Some of the block configurations may seem inward looking but the neighbourhood creates spaces of intimacy while making connections to the outside, thus generating a gradient between private and public facilitated by spatial form and thresholds.[45] The central green axis's urban

[42]Bakema, *Van stoel tot stad*, 100–107.
[43]Risselada, *Team 10: In Search of a Utopia of the Present*, 170.
[44]Harvey, *Rebel Cities*, 4.
[45]Bakema, *Van stoel tot stad*, 96–97.

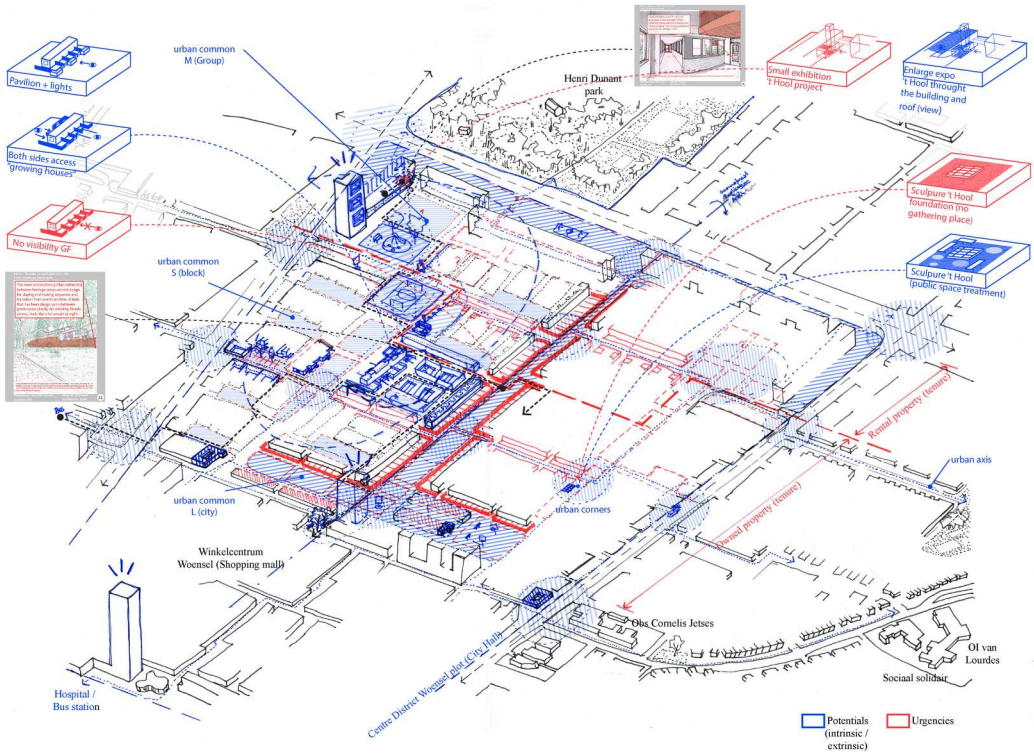

Figure 6. Urgencies detected and Potentials (intrinsic and extrinsic) for design framework and strategies. Source: Made by authors based on Google Earth view and 3D.

character provides clear flow between the two visual groups acting as a space of transition. However, these groupings of dwellings turn their backs to it, making it act like a 'rear' space with limited access to houses and without clear visibility on the ground floor. Missing what Jane Jacobs called the principle of 'eyes on the street' (social control through visual permeability), the result was the generation of spaces which felt unsafe.

The preservation and integration of existing context shows great sensitivity towards the articulation of remnants of the organic city with continuity to the modern one (see Figure 4). Yet, there are few spaces that promote or disseminate the history of the project and there is no coherent framework for structuring the historical and cultural landscape. By doing this an urban framework could be created to connect places so that inhabitants and visitors could meet at meaningful nodes and places (see Figure 6). And finally, it is also necessary to provide better treatment of public space using digital tools (e.g. QR codes, augmented and/or virtual reality, etc.).

Discussion and conclusion

Critical cartography allows us to deconstruct how knowledge is generated in relation to space. The principles of the Open Society and Bakema's 'total space and urbanization' have been analysed, as have power-knowledge relationships in 't Hool, as well as potentials to unlock possible failures and imagine new perspectives addressing the needs of an Open Society in the twenty-first century, while embracing the valuable materials and lessons from this proposal and imagining how (the visionary

and committed professional) Bakema would navigate today's needs and demands (global and local).

The process of deconstruction and reconstruction carried out from the review of historical statements about knowledge from different perspectives allows us to know the stories behind the project and its discourses, and to approach them critically and qualitatively from the 1960s to today. This is possible because of our holistic approach which addresses the objectification of space from Eurocentric perspectives and which affords a multidisciplinary approach to sources. These processes help us to obtain parallel stories which we can use to analyse 't Hool. Thus, we unfold a diversity of perspectives, adding depth to the urban renewal projects, design strategies, and policies that inform regeneration processes. In addition, by incorporating the historical perspective and the experiences of inhabitants we detected a strong sense of community and willingness to work together for the improvement of the common good (community spaces), values that 't Hool had been based on since its conception. However, as Crampton and Zonneveld pointed out, there is a need to increase objectivity, and foster the incorporation of more quantitative methods. The latter would require more data and the use of methods from other fields such as neuroscience, but it could also limit the imaginative aspect of design assignment. In addition, inhabitants cannot address issues of land use, regulations, policies, etc., so alliances with public institutions need to be strengthened, or new ones forged, to allow mass housing to become more socially, environmentally, and economically resilient.

In our view, critical mapping is a partly subjective, partly objective[46] approach operating between analysis and design. It is an iterative process located between reality, analysis, critique, and imagination. In this way, it is possible to detect latent and hidden blockages generated by certain relations of power-knowledge, and shed light on intrinsic or extrinsic potentialities that allow the construction of new visions or collective imaginaries. This method shows potential regarding the possibility of observing spatial phenomena and detecting the transversality of the spatial patterns in different fields. Moreover, we think that it has potential as an instrument for engaging with stakeholders and disciplines in a co-creative process.

On the other hand, critical cartographies help reduce the distance between theory and practice, since it is operationalised and discussed in many fields, especially cartography, geography, and planning. The method is grounded in a solid theoretical framework and operationalized in different ways for professional practice. The transferability capacity of the critical cartographic method described in this work is relative and proportional to the access to information that can be obtained and its reliability.

One limitation is that several 'visionary' principles of the 1960s no longer seem avant-garde since they are taken for granted in contemporary society. Studying a relevant case from that era allows us to assess its historical significance, although the principles should be reformulated under a more subaltern framework,[47] since the communities that currently live here have more diverse social, cultural, and gender forms.

Finally, we aim to contribute to contemporary urban planning history by sharing knowledge and methods that improve urban renewal processes. We also aim to inform actors and stakeholders of

[46]Crampton, "Maps as Social Constructions"; Corner, "The Agency of Mapping".

[47]Subaltern studies is a branch of Critical Theory that emerged in India from diverse Indian scholars trained in Western Universities (Oxford, Cambridge, etc.). The subaltern term was introduced by Gramsci, which refers to the marginalized social groups and the lower classes of societies because of their race, ethnicity, social class, gender, sexual orientation or religion by the power structures, knowledges and narratives generated by dominant groups in our societies. This group of scholars led by Guha and Spivak among others, proposed to break away from the hegemonic Eurocentric writing of the elites to start writing history against the grain and restore history of the subordinated. Thus, give back to the common people their agency in history.

this case study, with its hidden issues, and ways of addressing them to show potentials that unfold from design strategies, urban frameworks, best practice, change of regulations, and policies.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Notes on contributors

Juan Sanz Oliver is an independent scholar. He holds an Architecture Degree from the Universitat Internacional de Catalunya in Barcelona and a Master's Degree in Urbanism (EMU post-masters) from TU Delft. During his professional career in practice in Europe and Africa he has researched diverse urban topics between the scales of urban design and architecture.

Gregory Bracken is Assistant Professor of Spatial Planning and Strategy at TU Delft. He is the author of *The Shanghai Alleyway House: A Vanishing Urban Vernacular* and editor of *Ancient and Modern Practices of Citizenship in Asia and the West*, *Contemporary Practices of Citizenship in Asia and the West*, *Future Challenges of Cities in Asia* (with P. Rabe, R. Parthasarathy, N. Sami, and B. Zhang), *Asian Cities: Colonial to Global*, and *Aspects of Urbanization in China: Shanghai, Hong Kong, Guangzhou*.

Víctor Muñoz Sanz is Assistant Professor of Urban Design at TU Delft, where he researches architecture at the intersection of labour, management, and technology. Previously, he was: fellow at the Akademie Schloss Solitude; coordinator of the Jaap Bakema Study Centre and coprincipal researcher of *Automated Landscapes* at Het Nieuwe Instituut; and emerging curator at the Canadian Centre for Architecture. He coedited *Roadside Picnics: Encounters with the Uncanny* (dpr-Barcelona, 2022), and *Habitat: Ecology Thinking in Architecture* (nai010, 2020). Muñoz Sanz holds a degree and a PhD in Architecture from ETSAM, and a Master of Architecture in Urban Design from Harvard University.

ORCID

Juan Sanz Oliver http://orcid.org/0000-0001-9958-0356
Gregory Bracken http://orcid.org/0000-0002-7382-1534
Víctor Muñoz Sanz http://orcid.org/0000-0002-9604-0925

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