Local Material Practice as a Collective Spatial System *in a Craft Neighborhood*

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Abstract

This article demonstrates how spatial production occurs within local material practices as socially and spatially structured phenomenon. Discourses in local material practice often emphasized the repetitive production processes as cultural expressions; however, the spatial dimension of these practices remains under-explored. Understanding how space is produced and utilized in the process of making '*gerabah*' as one of the original Indonesian pottery crafts in Yogyakarta provides new insight into the ecological, social, and technological systems that sustain local communities. This research is important to bridge the knowledge between cultural production studies and spatial analysis within the context of local craft industries. The main objective explores how local craftspeople organize and utilize space throughout the stages of material transformation, and how these spatial practices reflect, sustain, and shape collective systems of production and cultural identity. Based on data collected through field observation and semi-structured interview among craftsmen in Kasongan Village, this study employs spatial reading as an analytical approach to understand how space is produced. The result suggests that by analyzing the interrelations between spatial layers, such as production zones, organizational structures, and dynamic operational patterns may reveal the underlying logic of spatial organization embedded in traditional craft environments.

Keywords: *Production of Space, Spatial Reading, Material Practice, Dynamic, Collective System*

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Introduction

The understanding of architectural space has evolved significantly, particularly concerning social and spatial practices. Earlier discourse was more focused on the definition of "what is space?." Space is defined as an abstract, geometric and functional entities (Giedion, 2009; Holm, 2020) and treated as container or background. While shifting from pure form to sensory form, the space is still about architectural expression. Meanwhile, other foundational thinking about space as socially produced. Lefebvre (1991) introduced the idea that space is not neutral container. Space is produced through social relations (Robin and Rothschild 2002; Shankland 2020), practices and power structures, not just a backdrop for human activity. This shifts architectural discourse from purely formal concerns like shape, form, style to how space is lived, organized and inhabited (Archer, 2005). Archer (2005) engaged with the production of space in an architectural context where beliefs, norms, social practices and architecture intersect.

The discourse of space then expands into "how is it lived and culturally produced?" where the main concern is on contemporary issues of spatial culture, everyday life, meaning and experience in architecture (Peponis, 2024; Young, 2023). The focus shifts on spatial culture emphasizes how inhabitants, users, everyday practices bring life into architectural space. Space become a place to act and socially constructed and constitutive (Schmader and Graham 2015). Further theoretical and practical inquiries into the production of space become increasingly significant when they recognize that space is shaped not only by form and function, but also by user experience, cultural values, and embedded meanings. The interactions between people, things, products, and space are affected by human cognition and social action processed (Anschuetz et al., 2001; Gillings et al., 2020; Larasati et al., 2022). Consequently, the nature of spatial problems is often articulated through questions such as: Where do social actors carry out their activities? How are these actions performed and structured? And when do they take place? These questions are particularly relevant in craft-making spaces, where spatial organization is closely tied to technological processes and ethnological modes of production.

Craft-making is deeply rooted in local material practices which refer to the ways in which communities use, process, and transform materials that are sourced from their immediate environment, based on locally inherited knowledge, skills, cultural values, and traditions (Sennett, 2009). These practices are not only technical but also social, cultural and serves as an activity where individuals as cultural beings can live, think, and emotionally respond to a place in community life. It is also processing of thoughts and feelings regarding everyday life events can occur (Adamson, 2018; Costin, 2001; Palmsköld and Torell, 2020). The study of craft-making has focused on products and craftsmanship to meet consumption and production needs based on several mechanisms that construct the making process (Asante et al., 2015; Bamforth and Finlay, 2008). Archaeological evidence has helped us understand how ancient communities share various common technological traditions across regions (Simon and Burton, 1998; Kassab, 2021). However, the ways in which the craft-making space continually produced, reproduced, and collectively transformed over time remain underexplored. This request for a specific analytical approach to uncover spatial forms emerge within craft neighborhoods and how these spaces materialize through ongoing practices.

This research investigates the local material practices within craft-based neighborhoods to see how local craftspeople organize and utilize spaces throughout the stages of material transformation as a system. Although craft neighborhoods are formed naturally, sponta-

neously, locally and come from community-based traditions (Papanek, 1995), the study in this article seeks to examine the values of contextual architecture, particularly in terms of spatial concepts linked with materials and technology in the way how these spatial practices reflect, sustain, and shape system of production and their cultural identity. The case of *gerabah* (indigenous Javanese pottery) is used to observe how spatial organization and production stages are consciously or intuitively arranged by local communities as a form of social practice that constructs identity within craft neighborhoods.

This article introduces a system as a collective mode of working and living within a community, in which production processes, knowledge, tools, spaces, and responsibilities are continuously negotiated, shared, and sustained among its members. It is not merely a group of individuals working in proximity, but a social and spatial organization where collaboration, mutual dependence, inherited skills, and cultural values come together to continuously shape both the craft and the environment in which it exists. The findings of this study are expected to enrich theoretical understanding of local material practices as a collective system and broaden the notion of contextuality in relation to material process and spatial production. Moreover, this knowledge has the potential to inform the development of design frameworks for a neighborhood based on community-driven collective spatial and production systems.

The Production of Space in Craft Neighborhood

Humans continually shape and produce their physical space as an adaptation to their surrounding environment. Physical space is not simply as background for passive actions, rather it exists because of social action and in turns structures social relations (Robin and Rothschild, 2002). At the same time, the presence of physical space can also limit certain human behaviors or even trigger other forms of operations. Physical space has several structures and devices that hold social meaning and function as an active agents in the realization of various social actions (Bourdieu, 1989; 2018). Following those arguments, physical space may be understood as a living canvas of the presence of various operations and actions. Space becomes a container for human social action that exists independently, which begins to be produced before the actual event and is a combined effect of the processes carried out by humans and the environment.

The interrelationship between physical space and social actions in people's everyday lives generates what Lefebvre (1991) calls social space. Social space could be produced through socio-historical relations while questioning how space is produced concretely (Morida Siagian, 2016). Related to this thought, Lefebvre places spatial practice as the lived dimensions of social practice. Spatial practice is not always associated with physical spaces where social practice takes place but also the realm in which appropriation occurs. Appropriation can be in the form of physical and concrete actions that provide other actions or through the construction of knowledge that allows the practice of interpreting space. In this way, human experience becomes central to how space is understood, inhabited and produced.

The human experience is shaped by both material and non-material things that transformed into products. Transformation refers to internal change that revealing and reconstituting an object's essence. Leyton (1992) argues that the trajectory of change can also be described as a discontinuity series consisting of a series of actions that can be classified.

From these perspectives leads to an assumption that space, as a form of 'contextuality' of the world, has been altered, reproduced, or modified from its original form due to ongoing human action. Therefore, studying the trajectories of space transformation within material practice, from past social action to the present, becomes essential as another form of contextuality in craft neighborhoods.

In understanding how communities in craft neighborhoods produce and transform their space, it is necessary to move beyond viewing space solely as site for production. The search for space identity should study the history of space and its representation (Lefebvre, 1991). Such investigations must be situated between various spatial practices of any systems involved to uncover other social processes and arrangements of program embedded within them. Yet, spatial studies often begin with the study of measurable material, spatial dimensions and physical remains (Delle, 1998; Parcak, 2019; Raja, 2021). The spatial dimension is frequently defined as part of an abstract system that organizes cultural activities within a time-space framework (Kidder,1961).

The craft-making space in a craft neighborhood is continuously reproduced, experienced and negotiated beyond its function as a site form material production. How the space is produced shows a form of activity where humans as cultural beings can live, where the processing of thoughts and feelings regarding everyday life and political events can occur (Palmsköld and Torell, 2020; Atmodiwirjo and Yatmo, 2019; Certeau et al., 2000). 'Making' as an action and attitude must be studied indirectly by analyzing space and objects related to production activities. Since human behavior is difficult to fully access through interviews or observation, spatial interpretation of local material space must attend not only to spatial origins but also to interconnection, distortions, displacements, reciprocal interactions, and their relation to social-spatial practices or certain modes of production embedded with them.

Collective Action in Local Material Practice

Local material practice introduces materials not merely as physical elements that shapes an architectural space, but as process of making of local materials is understood as collective action in producing everyday spatial environments. The perspective stems from an intrinsic understanding of materiality that cannot be detached from architectural practice about several other aspects of an architectural substance (Schröpfer and Carpenter 2011). Kolarevic (2010) similarly emphasizes that architecture as a material practice implies that making, the close engagement with the material which is intrinsic to a design process . The involvement of materials with tools and production methods works together as a system. More broadly, material practice becomes part of a collective system that intertwined with everyday practices in forming the lived space of a particular local community.

The discussion of material practice as a system in architecture is essential to move beyond current understandings that is reduce it to purely technical or construction-related issue. Most of current discourse on material practice is preoccupied with form making (Ingold, 2013). The material has yet to acknowledged as the core of element in spatial production. Instead, it is largely framed as a part of the system-forming space which concerns of form, structure, and geometry (Bell and Rand, 2006). Yet, architecture as a material practice originates from fundamental human physical needs in responding to environmental condi-

tions through the processing of materials and systems that have been available in nature. (Minke, 2013; Semper, 1989; Herrmann, 1984).

Architectural practice offers various ways of perceiving and shaping the built environment through structured design between forms and materials (Bell and Rand ,2006; Coleman, 2020; Golden ,2018). Attfield (2000) also mentioned that the material culture offers an alternatives approach for understanding design, both products and space. In architectural space-making, this often corresponds with the material's honesty or components that form the atmosphere of the space (Zumthor, 2006). Positioning material practice in the discourse on the formation of architectural space also means appreciating sensory qualities, technical potential, materiality, and other attributes brought by material systems.

The understanding on material practice expands into form (Atmodiwirjo and Yatmo, 2020) of architectural grounded in context which an architectural work is presented, not limited to the physical existence of material in various forms and types. Yet, it is also closely related to various techniques and methods that accompany the existence of materials that are closely related to the ecological context and the socio-cultural context of everyday society. This opinion aligns with Sennett's (2008) notion of craftmanship as a form of 'act of making,' where design is a negotiation among multiple parameters. It this sense, 'making' is not an isolate act, but a collective and situated process that formed through interaction between material, environment, skill, and community.

Methodology

This study employs a qualitative, non-participatory research approach using case studies to investigate how local material practice of '*gerabah*,' as a Javanese indigenous pottery shape and organize spatial production in craft neighborhoods. Developed in many different forms, the making of *gerabah* represents a material practice on various scales and constitutes an important part of architectural production activities. The focus is on understanding how space is socially and materially produced through everyday craft-making activities, aligning with the research objective of revealing material practices as a collective spatial system. This was a non-participatory observation, meaning the researcher did not take part in the making process, but carefully observed how craftsmen moved through their workspace, how tools and materials were arranged, and how household and production spaces overlapped.

The fieldwork was conducted over one month in several production sites within Kasongan Village, Yogyakarta, a renowned craft settlement where pottery-making has been practiced and passed down through generations. Kasongan was deliberately chosen because of its strong spatial connection to craft-making, the arrangement of workshops within homes, the shared use of communal kilns, clay processing areas near rice fields, and display spaces that merge seamlessly with domestic life. These characteristics offered a rich environment to observe how space, materials, and community coexist and evolve together.

The data were gathered by observing the practices of making *gerabah* as a whole process from material preparation to finalization. Photographs were taken to obtain information on each of the processes. To complement these observations, semi-structured interviews were

conducted with 15 participants, consisting of master craftsmen, kiln operators, younger artisans, local leaders, and traders. Participants were selected based on their experience (a minimum of five years in *gerabah* production) and their active involvement in one or more stages of the craft-making process. Each interview focusing on several themes: how workspaces are organized, how decisions about material placement are made, how knowledge and skills are inherited, how production is shared among family or neighbors, and how space relates to their identity, memory, and tradition.

The data analysis involved three main steps. First, photographs, sketches, and field notes were synthesized into spatial diagrams to understand zoning, workflow, and the relationship between domestic and production spaces. Second, interview transcripts were coded to identify recurring themes such as material flow, collective labor, spatial adaptation, and cultural values embedded in making. Finally, these spatial and narrative findings were combined to answer the research questions: How is space produced alongside material practices? How does making become a collective spatial system? And how does this process contribute to cultural identity in craft neighborhoods? Through this narrative methodology, the study not only documents the physical processes of *gerabah* making but also reveals how space and material practices are continuously negotiated, shared, and lived then becoming part of a collective system that shapes the architectural identity of the community.

Spatial Reading of Local Material Practices

The following section presents a spatial reading of local material-making space based on multiple sources. In this study, spatial reading refers to the process of interpreting how space is produced, organized, and experienced through material practices and everyday human actions. It is not limited to observing physical forms or architectural layouts, but instead aims to understand the relationships between people, materials, tools, and the environment as they interact to shape space over time. In reading the spatial setting, multiple sources are utilized to understand how space is produced and organize through local material practices. This includes integrating contextual information derived from physical traces, documentary materials, and evidence of material culture.

The spatial reading of local material practices is conducted through three interrelated aspects that help reveal how space is produced and collectively organized. The first aspect is the micro–macro spatial setting, which examines space at both the small scale such as individual workstations and the larger scale of neighborhood organization, including the relationships between homes, workshops, communal kilns, and circulation routes within the village. The second aspect concerns the organization of actors, focusing on how craftsmen, family members, apprentices, kiln operators, and traders occupy and interact within space. This includes understanding how roles, responsibilities, hierarchies, and patterns of cooperation are spatially arranged and embedded in everyday activities. The third aspect is the material flow and layers of operation, which traces how materials move from one stage to another such as clay sourcing, preparation, forming, drying, firing, finishing and how each layer of operation requires specific spatial conditions and interactions. Through the integration of these three aspects, spatial reading enables a deeper understanding of local material practices as a collective spatial system rather than an individual or purely technical activity.

Macro-micro Setting

The production of local material-making space can be read through two interconnected spatial settings: micro and macro. The macro-setting represent the broader environment where communities interact and collaborate, while micro-setting captures the immediate sphere of individuals action (Schmader and Graham 2015). The anatomy of micro-setting can be defined as a 'making site,' where social action can be traced from individual activities that carry out a limited number of tasks with limited tools. The activities of the individuals present constitute and represent aspects of social reality that are essentially qualitative, fluid, and dynamic. In contrast, the macro setting situates material practice within the larger context of community life, encompassing economic and domestic activities that overlap with repetitive production routines.

In reading the craft-making space at both the macro or micro setting, direct correlation between spatial features and their role in shaping space are often difficult to delineate. This is because process of making crafts is inherently cyclical, involving repeated production activities that continually reconfigure the spatial environment. To fully comprehend this process, it is essential to trace how the craft-making space is re-produced from two kinds of aspects, 'material' and 'immaterial. Material aspects include the tangible elements such as objects, tools, and architectural features, while immaterial aspects refer to intangible dimensions such as time, rhythm, and bodily movement. These aspects are not static but act as dynamic parameters that evolve through practice. Among them, time plays critical role. Time is one of the immaterial aspects in both micro and macro settings that compose the space production rather than as a piece of a frozen situation. Rather than representing a fixed moment, time in spatial production functions as a continuous process shaped by human movement and embodied experience (Simonetti, 2013). Related to this perspective, time has a very dynamic power in producing space as an abstract space, not a formal space. Space is not seen as a static or formal construct but as an abstract, lived continuum that unfolds through temporal and material interactions.

Through spatial reading in a macro level, we can easily understand of how community interactions from the overall organization of the craft-making environment. In Kasongan Village, *gerabah* production areas are distributed across multiple, interrelated locations, forming a network of spaces defined by scale and function. The layout shows that the *gerabah-making* rooms were concentrated in more than one location. The production area is spread across several interconnected places, which can be divided into several types of production space based on different scales and programs.

The area in macro level can be categorized into several typologies: large-scale production centers dedicated solely to pottery-making, medium-scale houses that combine production and display functions and smaller household-based workshops or showrooms that support larger facilities. The smaller units operate as supporting nodes within a broader production system, which evolves over time to accommodate specific pottery demands. This dynamic system allows smaller production spaces to adapt their roles in response to the needs of larger ones. For instance, as illustrated in Figure 1, Production Center A functions as one of the village's main *gerabah* hubs, supported by nearby smaller workshops (Rooms 1, 2, and 3). Similarly, Centers 4, 5, and 6 operate as auxiliary systems for Production Center B. Within each of these workshops, at the micro scale, various craft activities occur and each representing an individual layer of action within the larger collective system of spatial production.

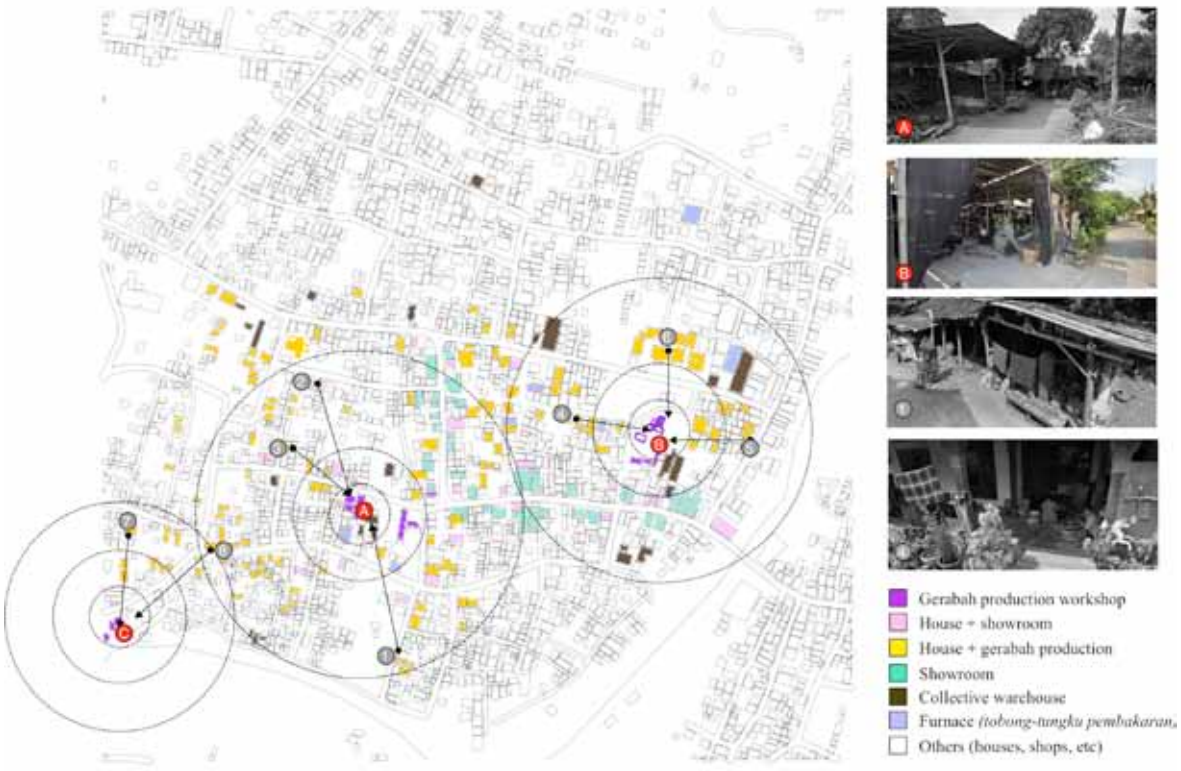

Figure 1 Macro setting of *gerabah* production space.

Spatial readings at micro settings in Kasongan Village shows a close relationships between the workshop production and domestic space. The relationship between the two practices highlights distinct settlement characteristics that emerges from the interaction between productive and domestic function. One visible thing is the difference in the arrangement of patterns and spatial characteristics formed from the relationship between material practices and other domestic practices. In most cases, domestic space occupies the inner layer of the dwelling, while the presence of a workshop positioned toward the outer layer. The external side of workshop not only connects the settlement's outdoor communal environment with the household's interior on the inner layer, but also transforms the production area into a potential site of social and economic interact. This spatial configuration allows *gerabah-making* to extend beyond domestic boundaries, creating opportunities for engagement with visitors and functioning as a form of cultural and economic attraction.

At the micro scale, spatial readings exposes dynamic the nature of spatial production identified through traces of activity and movement of both fixed and non-fixed elements involved in the *gerabah-making* process. The shape of physical space is a fixed element, meanwhile materials, tools, and those that tend to be easily moved function as non-fixed elements. The interesting thing is that the spatial dynamics evolve through collective presence and interaction of actors who performing their respective roles. For instance, in the micro setting of the *gerabah* production room, which is integrated with the house or domestic setting (figure 2). The manufacturing process is carried out by husband and wife who make *gerabah-making* activities part of their domestic activities. Both might divide tasks where the wife forms specific parts of the pottery while the husband assembles and finish-

es the pieces. The wife's role is to make certain parts of the *gerabah*, and the husband's role is to put certain parts together and complete the work. Changes in spatial form and movement of tools occur dynamically depending on the type of *gerabah* being worked on. This fluidity illustrates how domestic and productive life are intertwined, producing an adaptive spatial system sustained by everyday material practice.

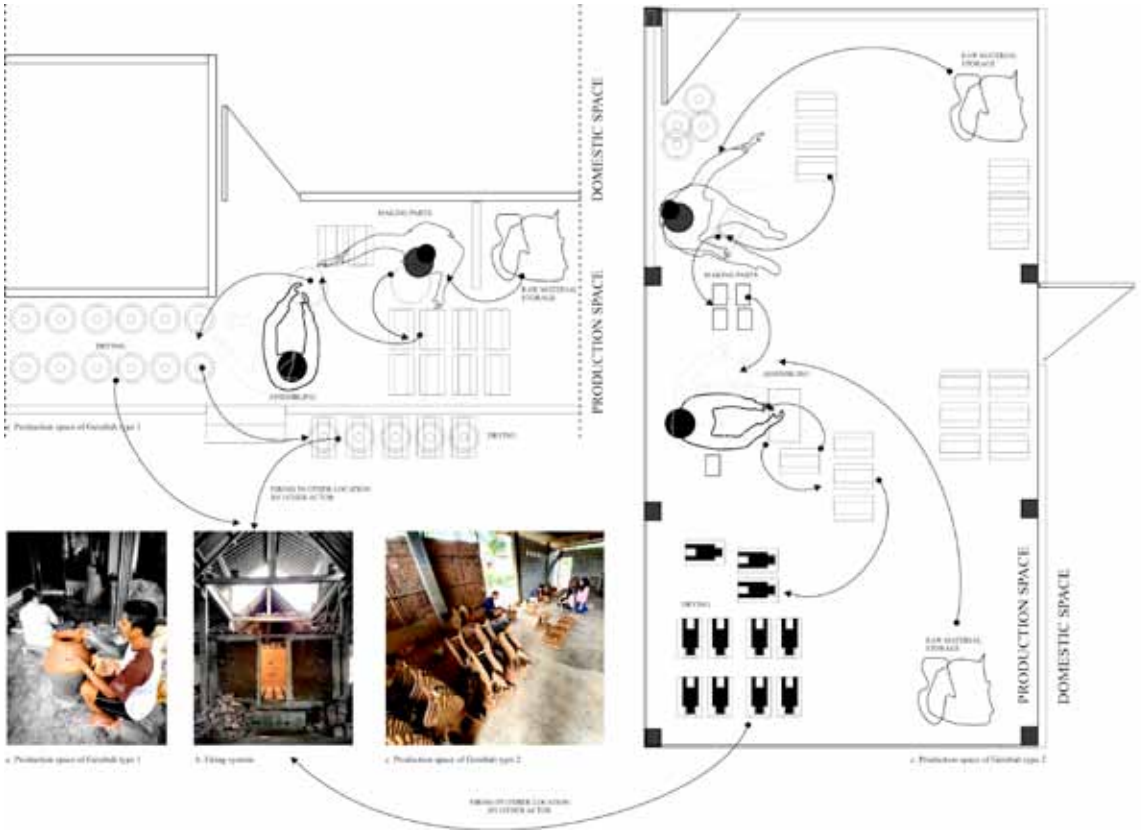

Figure 2 Micro setting of *gerabah* production space.

The analysis of the macro-micro spatial settings in Kasongan Village reveals that spatial production cannot only be understood in isolation within a single scale. Rather, it emerges from the continuous interaction of activities and overlap between the two settings. The reciprocal social relations operating between the micro (individual and domestic) and macro (communal and neighborhood) levels demonstrate how space is constantly reproduced through everyday practice. The ongoing production of space is reflected in the variations of spatial patterns that formed from the interplay relationship between material practices and other daily practices. These interconnections enable everyday environment to be produced as social spaces with a programmatic focus on action rather than form. Ultimately, spatial production in Kasongan is shaped by the coordination of actors, the circulation of materials, and the layered operations that together give meaning and identity to the community's built environment.

Organization of the Actors

The production of local material-making space in Kasongan Village involves a range of actors who play essential role in *gerabah-making* process. The primary actors are the makers who directly engaged in shaping and producing pottery. However, not all makers in the village are professionals artisan who rely in making *gerabah* as their main source of income.

Some are homemakers who integrate pottery-making as part of their daily routines. The coexistence of professional and non-professional makers in the *gerabah-making* process presents a dynamic and flexible organizational pattern within the village's production system.

The organization of makers in Kasongan village is inherently dynamic and changes according to the type of product being produced, the level of complexity, and the available workspace. A single actor may work on the same product in multiple locations or contribute to different products within the same area. For products with high complexity and composed of several parts, different actors collaborate on one particular part or stage of work based on their level of expertise. Beyond the core group of actors involved in this organizational system, various supporting actors outside the main making process, such as business owners, suppliers of soil materials, shippers of finished goods, and also influence the organization of production and contribute to shifts in how space is used.

The dynamic of maker organization can also be seen from the relationships among different scale of the production system, which are range from small to large production scales. These systems are spatially distributed yet interconnected, with smaller production units often functioning as support systems for larger ones. At times, several small-scale productions depend on each other to form a larger system. The system evolves to meet the needs of certain types of *gerabah* production. The programs contained in the small-scale production may sometimes change following the program's needs in the larger space. Such organizational change shows a system that works collectively based on each role played by each actor according to their respective skill levels.

Furthermore, this adaptive system affects how production spaces are occupied and utilized. The system organization of *gerabah* makers also shows a change in the occupancy of the making space, which is determined by the needs of different programs within the production space. The larger production space can accommodate multiple programs but is less likely to be modified. On the other hand, a smaller production space, which is also a support system for a larger production space, has a higher probability of program changes. They can be reorganized or repurposed to support different stages of production or to accommodate new types of products. This spatial flexibility highlights the capacity of smaller spaces to be continuously reproduced and reoccupied, revealing how the *gerabah-making* system operates as a living and evolving collective spatial network.

Material Flow

The flow of material in making *gerabah* in Kasongan village closely influence by the characteristic of raw materials and the tools used to produce the *gerabah-making* space. Clay is the main raw material used to make all types of *gerabah* products consisting of various types. Even though they are made of the same basic material, it is possible to change the occupancy of the space based on the type of *gerabah* being produced. This can happen because each type of *gerabah* has different techniques for making different clay characters, although the process is generally similar.

In general, the material flows corresponds to three main phases of the *gerabah* making, which is divided into raw material processing, *gerabah* formation processing, and firing. Each stages involves different group of actors who specialize in specific tasks, collectively transforming the clay's character. The process in the whole series of *gerabah* making pres-

ents how clay material character is changed. Two main types of clay are commonly used to make gerabah are red clay and black clay. The character of each type of clay determines the good quality of certain types of *gerabah*. To ensure consistent material quality, many makers now prefer purchasing pre-processed, ready-to-use clay from distributors rather than preparing it manually.

The material flow system begins with distributors or suppliers who process raw materials into workable materials. The process starts with clay extraction from surrounding areas known for their high-quality deposits. The raw clay is then sorted and separated from other elements that may reduce its quality. After that, the clay is further processed manually by stepping on it, using tools, or using a milling machine. The processed clay material is delivered to various workshops across the village, where it is shaped into different *gerabah* products using a range of techniques. Once formed, the pieces are sun-dried to reduce moisture and strengthen their structure before being fired in communal kilns to achieve a denser and more durable finish. The final products are subsequently distributed to different markets or display spaces by various actors within the production network.

The tools used in *gerabah* production also demonstrate flexibility and adaptability. Their roles often change depending on the production technique or product type. A primary example is the turntable, a central tool used in rotational forming for producing such as jugs, flower vases, cups, etc. However, turntables's use extend beyond rotational technique It is often repurposed for other function, such as aiding in assembling multiple parts of a product by allowing smoother maneuverability during the process. This adaptability of tools reflects the fluid nature of spatial and material interactions in the production process.

Differences in the flow of material are also evident across scales of production. In a large-scale production workshop, the material flows tends to be more continuous and complete from raw materials to final firing stage. Conversely, in small-scale production workshop, typically handle only specific stages, such as shaping, while relying on communal facilities for material preparation and firing. In some small-scale productions, spatial limitations even cause the material flow to shift midway through production, requiring unfinished pieces to be transported elsewhere for subsequent stages. This variability illustrates how production scale, spatial capacity, and material logistics together shape the dynamic system of *gerabah-making* in Kasongan Village.

Layer of Operation

In general, the process of making *gerabah* in Kasongan village consists of three main stages: preparation, formation, and finalization. The preparation stage involves preparing the clay, kneading, moistening and removing any remaining impurities to obtain high-quality material suitable for further use. The formation stage focuses on the process of transforming the clay into specific shape using various tools and techniques such as modeling and hand-building, which involve adding and subtracting clay to achieve the desired form of *gerabah*. The finalization stage includes shape trimming,firing process, and quality control process to ensure the durability and consistency of *gerabah* finished products before distribution to various places.

Each stage of making *gerabah* comprises several layers of operations, all critical in shaping the material. Each operation may be carried out by the same craftsman or divided among different actor depending on the product type and production scale. During preparation,

essential task of operations include grinding and depositing the soil. The collected clay material is generally moistened with water until distributed, left to rest for several days. After that, the clay is milled repeatedly either manually or mechanically until it reaches the right texture and stickiness.. The best results are generally produced using manual milling, although a machine allows the fastest results. Typically, the same actors who collect the raw material also handle this stage before distributing the processed clay to other makers across the village.

The series of operations in the formation process is the core phase in *gerabah-making*. Its success relies heavily on the tacit knowledge and skill of each actor/maker, who uses both bodily gestures and tools to create various forms of *gerabah*. The operation is carried out using certain tools and techniques according to the type of *gerabah* to be made. Common techniques include molding, typically used for base structure, and hand building, applied to join parts or add decorative details .What makes this formation process particularly dynamic is the involvement of different actors in the entire series of operations. While most makers can perform basic molding operation on certain types of *gerabah* due its simplicity and repetitive use of tools, more intricate tasks require specialized skills, such as combining parts between parts on certain types of *gerabah* or the shape refinement stage. For example, the technique used in the refinement operation often involve sprinkling water or applying a damp cloth to smooth the surface of the clay, an operation that only experienced artisans can execute effectively. This interdependence creates a form of collective craftsmanship, where collaboration adapts fluidly according to production needs.

The firing stage is the final and most crucial process in *gerabah* production, where the clay is exposed to high temperatures to achieve structural stability and durability. Firing transforms the clay's materiality, preventing it from reverting to its original malleable state. This process is essential to ensure that the shape of the *gerabah* will not change back to the basic character of the clay by changing its materiality. This stage demands specific expertise, as makers must carefully control the temperature and duration to match the clay's curing properties. Skilled kiln operators are responsible for monitoring the firing process to ensure that each piece achieves the desired strength and finish. Through these cumulative and interdependent operations – each involving material transformation, technical precision, and collaborative labor – the *gerabah-making* process in Kasongan exemplifies how local material practices form a dynamic and collective system of spatial and cultural production.

Above cumulative and interdependent operations which involving material transformation, technical precision, and collaborative labor in the *gerabah-making* process illustrates how local material practices operate as a collective spatial system. The sequence of tasks, movement of materials, and interaction among actors together produce not only the physical artifact but also the spatial structure that supports it. Workspaces, domestic areas, and communal firing grounds are continuously reorganized as materials flow through different stages, reflecting a dynamic form of spatial production where social relationships, technical knowledge, and material conditions are inseparably intertwined.

Result: Local Material Practices as a Collective System

The case study presented in this article shows the complete process of making *gerabah*, where each stage is carried out in manual skills, embodied (verbal and non-verbal) knowledge, and particular modes of work coordination. The various operations at each stage can occur parallel or sequentially, functioning as an integrated system of production. This sys-

tem operates effectively in Kasongan village because the process of making *gerabah* often involves multiple actors woking at different location and times. Some operations, especially during forming stage, can be performed simultaneously in separate spaces, while other operations require the collective participation of specific actors within shared locations. Each operation is interdependent, forming a continuous network of production activities that collectively sustain the spatial and social system of *gerabah-making* (figure 3).

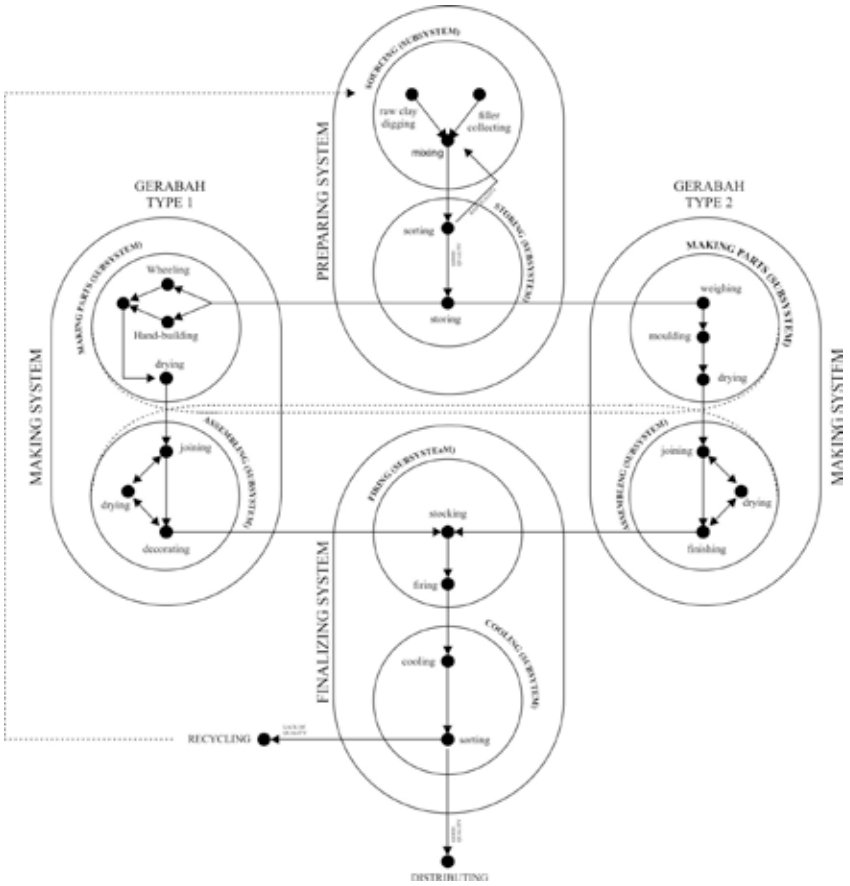

Figure 3 Local material practice as a collective system.

This study identifies both material and immaterial traces that reflect evolving social and spatial interactions in producing *gerabah-making* spaces. For instance, within the formation space, spatial changes occur spontaneously as a result of daily activities. Many production spaces in Kasongan village re not exclusively dedicated to craft-making. Instead, portions of domestic spaces such as the front porches of houses are often adapted for *gerabah* production. The openness of these material practice allows flexible social interactions among makers and between makers, even visitors. Such interactions transform the production space into a social and cultural setting, expanding its function beyond craft-making to include observation, knowledge exchange, and economic engagement. Consequently, these interactions redefine the spatial scale and character of the *gerabah-making* environment as a site of living knowledge production.

The spatial reading in this case study further demonstrate that space not a fixed entity but a reproducible process which continuously reshaped through the dynamic relation-

ships between actors, materials, and operations. The interplay between actors, materials, and operations reveals the collective nature of material practice and its role in forming an interconnected spatial system. Some actors can shift roles according to their skills and the demand of specific operations with certain tools, highlighting a flexible and adaptive organization based on mutual dependence.. This collective system not only reflects the practical coordination required for production but also embodies the social and cultural dimensions of architectural space as a shared and evolving construct.

The findings also show that spatial systems in Kasongan are co-produced through social interaction, collaboration, and the exchange of ideas among community members in craft neighborhoods. In this context, collectivity is understood as the sharing of roles, knowledge and labor to form an identity that may not be visible externally but is deeply rooted within the community of Kasongan village. The success of this collective system relies on a balance of trust, communication, and shared responsibility, although it remains sensitive to internal social and psychological dynamics. Nonetheless, this system strengthens the sense of communal space through conscious and unconscious acts of spatial negotiation and cooperation. Over time, it sustains and redefines contextual values which not merely as expressions of environmental harmony, but as evolving agreements and shared practices that form part of Kasongan's living cultural identity.

Conclusion

This study concludes that understanding the space production in local material practice as a collective system offers valuable insights into how traditional craft environments, such as those in Kasongan Village, integrate cultural meaning, social organization, and spatial form. The findings demonstrate that the *gerabah-making* process operates not merely as a series of technical activities but as a dynamic socio-material system in which actors, materials, and operations continuously interact. This dynamic relationship reinforces the idea that space is not a static container for activity but a living construct that shaped and reshaped through repeated cycles of making, cooperation, and adaptation. By framing *gerabah-making* as both a material and social process, the study shows how craft production can foster collective knowledge within communities and strengthen the relationship between local industries and the lived spaces of craft neighborhoods.

Drawing on Lefebvre's (1991) concept of the production of space, this research extends the idea beyond socio-historical processes to include socio-material practices, involves the tangible, bodily, and environmental engagements that occur within the act of making. Similarly, following Ingold's (2013) perspective of making as dwelling, the *gerabah-making* environment embodies a reciprocal relationship between people, materials, and place, where space emerges as a record of lived experience rather than a predetermined design. Appropriation through continuous physical and social actions enables spatial interpretation that transcends fixed functions, revealing space as fluid, temporal, and performative.

Ultimately, the collective system observed in Kasongan exemplifies a form of contextual architecture which grounded in local materiality, shared knowledge, and communal identity. It underscores that spatial production in craft neighborhoods is not only about building physical environments but also about sustaining social cohesion and cultural continuity through everyday material practices. Nevertheless, further research is needed to explore

how other community groups across different contexts produce and reinterpret their everyday spaces through distinct systems of local material practice. Comparative studies could deepen our understanding of how spatial production evolves across diverse cultural settings, contributing to broader architectural and anthropological discourse on how space, material, and society are co-produced as part of living traditions.

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