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Plasticity of Scale

Waterstone, Joshua; Marker, Martin

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Joshua Waterstone, Martin Marker
Complexity Handling in Practice, Institute of Architecture, Urbanism and Landscape, Royal Danish Academy – Architecture, Design, Conservation, Copenhagen, Denmark

Plasticity of Scale:
Architectural Typology & Contextual Understanding

Introduction

The following paper is a critical reflection of a drawing exercise conducted by 25 2. nd semester, 1.st year students at the Royal Danish Academy - Architecture, Design, Conservation. Students were challenged to produce large scale drawings contextualised within Copenhagen; we describe these drawings as 'operative drawings'. The drawing exercise and reflection is artistic research developed by the authors and should be understood as a means of informing critical practice within architectural education.

The focus of the paper will be to make a comparative analysis of the operative drawings set within a fictive Copenhagen context with a historic reading of Paestum. Abraham and Christiansen will provide theoretical context for the analysis. The ambition is to provide an analytical method framing the produced work and thus improving their future application in an academic context. The premise of the drawing exercise drew on a pertinent and immediate environmental concern; The UN predicts by 2050 68% of the world's population will live in urban areas (UN DESA2018). Re-use, reprogramming and adaptation is therefore critical to the development of urban scale thinking.

The exercise required a single drawing by each student merging multiple programs. Two Copenhagen based multi-programmatic typologies would be merged into a mono-programmatic housing typology dating from the 1960´s. Focus on adaptation was intentional as was the housing typology dating from the 1960's which is both universal and illustrative of a broader European context. Plasticity of Scale, refers to the qualities found within the drawing material produced: In these multiple scales operate simultaneously revealing imaginative and unforeseen typological arrangements. Divergent programs overlap and intersect creating new architectural potential. In this space historic traces and proposed intervention can be seen as a single overlapping entity.

The principle of reuse and reinterpretation of existing architecture as a means of revealing latent potential is both a pedagogical and ethical concern. It is a challenge to binary definition, new and old, instead prompting an affinity towards a reconciled understanding. Within this learning context, 'existing' and 'new' are not opposing forces but potential for nature and culture to coexist as a single contextual, architectural entity.
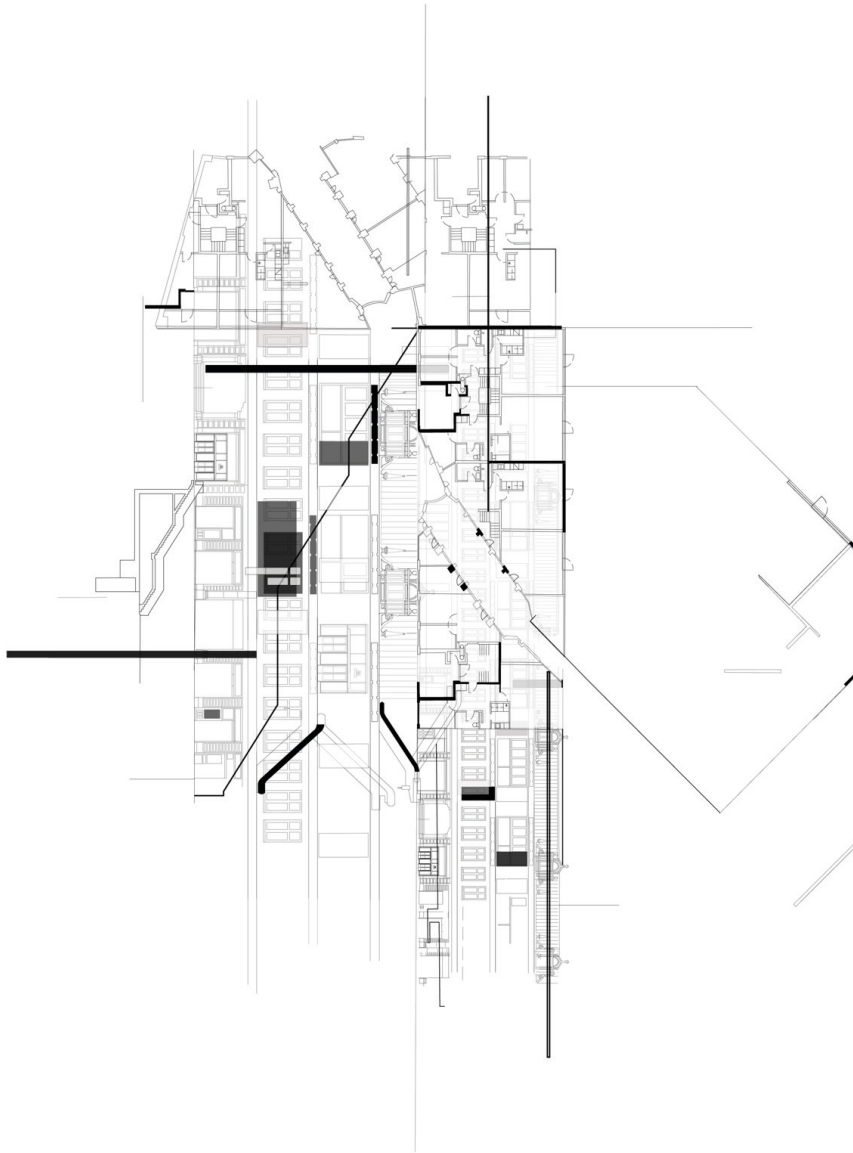
Fig. 01. Operative Drawing 01, fictive context Copenhagen
Source: Daniella Meinert (Student KOM, IBBL).

Paestum: A Historic Reading

Paestum, founded Poseidonia, circa 600 BC by the Troezenians and referred to by Aristotle is a graphic example of radical urban renewal and spatial reappropriation. As referred to by Virgil in his infamous quote; 'De Rosariis Paesti' Paestum can be characterised by its enduring qualities; a palimpsest of perpetual renewal. This process of reuse, alteration and adaptation of its building fabric is testament to the robustness of its architecture and a willingness to ignore style in favour of architectural continuity. These transformative qualities bear resemblance to the results of the operative drawing where we find the resemblance comparable.

As described by Richard E. Mitchell in 'Paestum a Roman Context', definition of a given style or period is ineffective due to 'Paestum's constant state of flux; archaic, classical, Lucanian, Roman, and even Christian styles' are present 'but these distinctions are not always convincing, particularly during the periods of transition from one to another' (Mitchell, 1985, P.44). This reading suggests fragments as the bearers of both physical and cultural continuity. The city can, through this lens, be seen as a landscape of continuous transformation.

The Roman Forum is an appropriation of the Greek Agora's southern quarter which preceded it. The axial north-south, east-west decumanus and cardo follow the remnants of pre-existing, non-axial Greek routeways. Adaptation of the urban grid-form accommodated pre-existing civic infrastructure. Similarly places of ritual and worship were fluid in their status, in the fourth century A.D the Temple of Ceres became a Christian church devoted to the Virgin Mary. In its Lucanian phase, the city was characterised not just by adaptation but adoption. The manifestation of this practice was evident as late as 18th century where the intact architectural expression of the temples became influential in Greek Revival architecture.

Complexity and richness are brought about through incremental change. Each re-appropriation of landscape and building fabric, iconography and ornament reveal latent spatial qualities. The operative drawing technique draws comparison; as with Paestum, space, scale, and time are gathered together in a single, legible entity. The overlaying of information as a drawing process acts as a catalyst; a collage technique to reveal complex spatial potentials inherent in the source material. The artistic and pedagogical relevance of this exercise is to shift focus away from the autonomy of rigid stylistic preference instead shifting focus toward urbanism's transformative potential and an ambiguity of stylistic preference. As with Paestum, the spaces captured in the operative drawings can be understood in a multiplicity of ways, in the context of this essay, void, edge and fragment allowed us comparative thematic content.

A New Nature

To establish a theoretical background as a means of understanding the new typologies produced and the 'plastic' understanding of scales applied we refer to Anders Abraham's work; A New Nature (Abraham, 2015). In our interpretation of Abrahams doctor thesis, he challenges the typical methods of site analysis focusing on material and style, instead shifting focus towards a different understanding of architectural typology and the principle of the palimpsest as a means of creating new architecture. Abraham argues that proposed architecture and existing context cannot be separated but must be thought of as one and the same. In a New Nature the first chapter begins by quoting Carsten Juel-Christiansen:

> The wearing down of the historical city centre by urban renewal and the eradicating of the historical landscape in the city outskirts by urban growth indicate a tendency in the development of the new city, as a result of which town and country, past and future, merge to form a new entropic landscape. (Christensen, 1985, P.12)

Within the operative drawing exercise this quote is used as a premise; prompting students to create a drawing space where city centre, periphery, past and present become part of the same. It is therefore relevant to combine different building typologies as a means of creating new urban potentials.

From History to The Act of Drawing

Large format A1 digital drawings were the medium chosen for the exercise as this allowed digital processes i.e. copying, scaling, merging and deleting to occur quickly and effectively. The drawing itself is seen as a tool for exploration, a means of creating and questioning rather than that of representation. Effectively the drawing becomes a generative design tool rather than a representational device. Within the space of an infinite digital artboard plan, section and elevation become one and the same. A bell tower from a church can occupy the structure of a modular housing project, arches or other 'found artifacts' can replace load bearing walls. Social functions and the private realm are drawn close to one another, connections made between dissociated spatial arrangements. This method allows for imaginative and unforeseen typological arrangements to evolve through drawing via the subversion or merger of scales.

Divergent programs overlap and intersect creating new architectural typological potentials. We refer to the term 'plasticity of scale' as a way to understand this merger of building types and scales within a single drawing. What occurs is a kind of palimpsest city on speed. Processes that would take hundreds or thousands of years in reality can be created in a matter of minutes. The urban fabric becomes matter that can be cultivated like bacteria inside a petri bowl with the drawing acting as the catalyst. In this way the drawings become context and architecture simultaneously.

In the following section analysis of the operative drawings will be dissected bearing our historic precedent in mind. Attention is paid to the drawing as whole entities and to specific themes seen within the drawing matter. The drawing will be presented as a whole together with close 'crops' in order to study individual moments, as entities in their own right. This shift from 'whole' to 'close-up' correlates with our ambition to view scale within the drawing as something fluid. This method is chosen in order view the drawings produced not as pure composition but informative and generative design tools. In the drawing analysis Void (figure), Edge (condition) & Fragment will be themes used to analyse the drawing matter.

Each theme refers to a characteristic quality present within the drawing. We see these themes as a way of both understanding and creating urban form, density, grain, mass and volume within the picture plane. Subversion of scale and format, i.e simultaneous use of elevation, plan and section allows complex spatial possibility. This technique is not a means of generating new architectural form directly but a means of understanding potential in the pre-existing condition.

- *Void (figure);* Can be understood as the (complex) spatial quality of the (void) 'figure' in between the assumed volumes illustrated in plan form.

- *Edge (condition);* Can be understood as the perimeter line and its relation to the edge of the picture plane. Inherent is the form created in this interstitial space.

- *Fragment;* Can be understood as architectures in miniature, those elements within the drawing which can exist outside the context of the drawing in which they are placed.
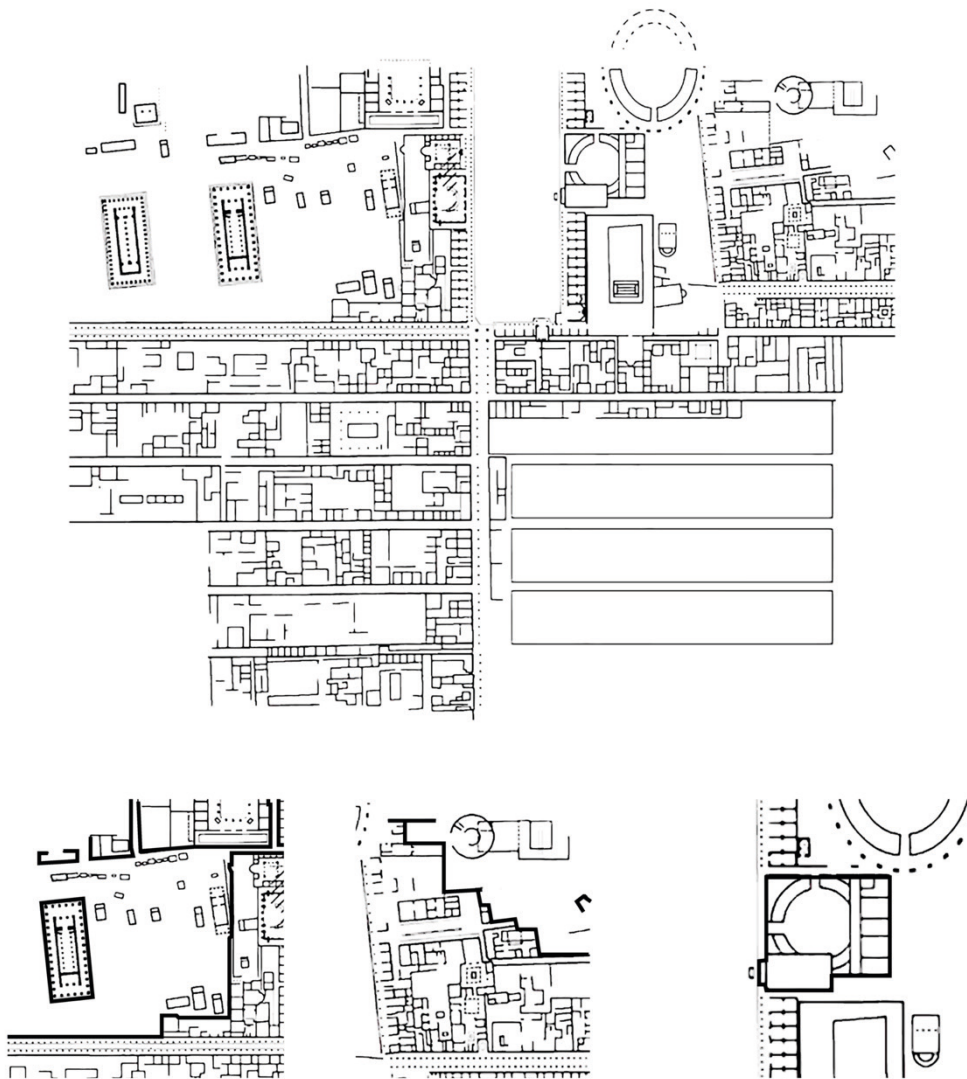
Fig. 02. Drawing Analysis of Paestum.
Top. Plan of Paestum, Bottom from left to right: Void, Edge, Fragment
Source: Ugo Erra, modified by authors.

- The plan of Paestum illustrates adaptation and adoption of architectural matter. Time has rendered both complexity and ambiguity within the urban form.
- The *void* figure, presents two Doric temples, off axis with the forum as well as architectural fragments.
- The *edge* is irregular and ambiguous, illustrative of an additive process, contrary to grid form planning.
- A *fragment* of a public space, partially revealed, incorporates at least two architectural languages. I.e The circular form and rectilinear spatial arrangement overlap creating complex poche space.
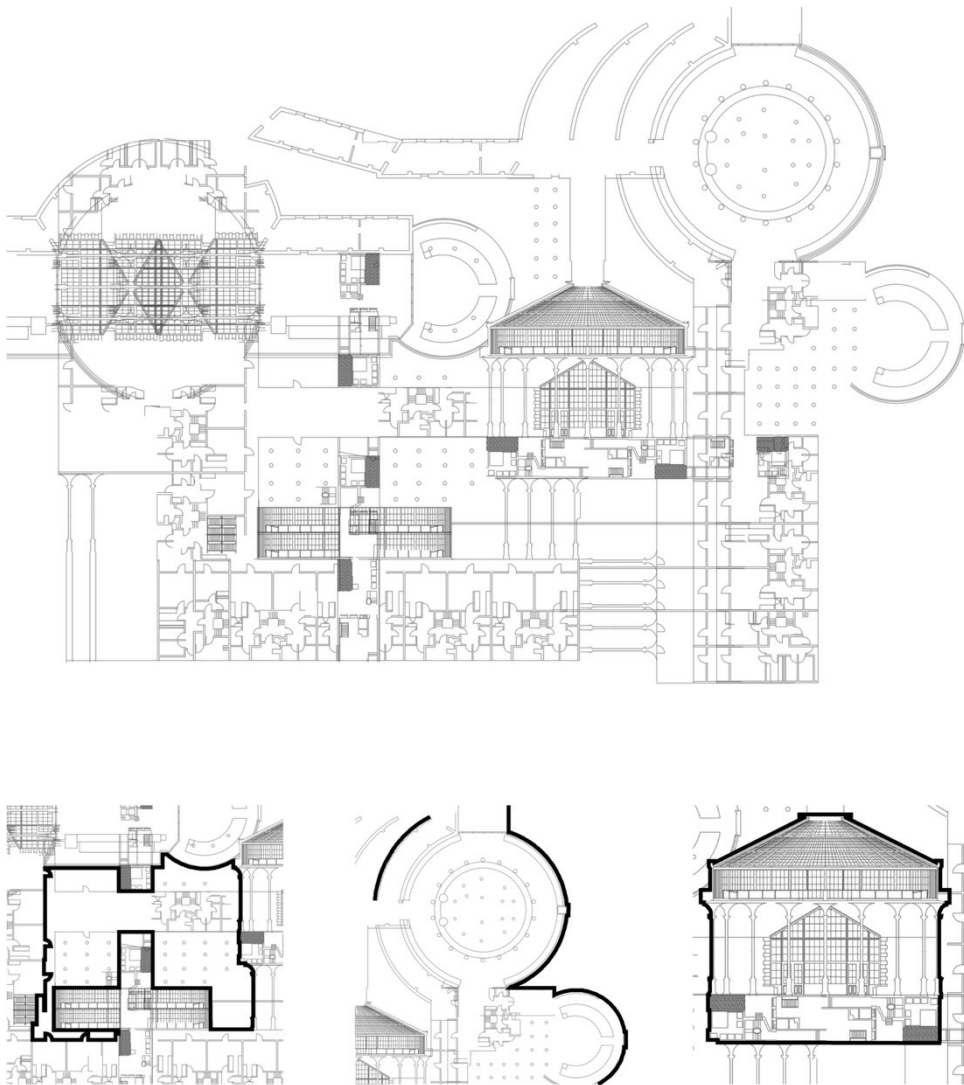
Fig. 03. Drawing Analysis of Operative Drawing 02, fictive context Copenhagen.
Top. Operative Drawing, Bottom from left to right: Void, Edge, Fragment
Source: Drawing by Jonas Stentoft Kirt (Student KOM, IBBL).

- *Operative Drawing*: Dynamic relationship between the axial building structures and circular, infrastructural forms. Relationship between size and scale is complex and multifarious.
- *Void*: Dynamic courtyard form shaped by surrounding façade, plan and elevation composition
- *Edge*: To rhs; circular motif defining enclosed edge. To lhs; fragments dissolving open edge.
- *Fragment*: Plan, section, and elevation motif merge into one architectural entity
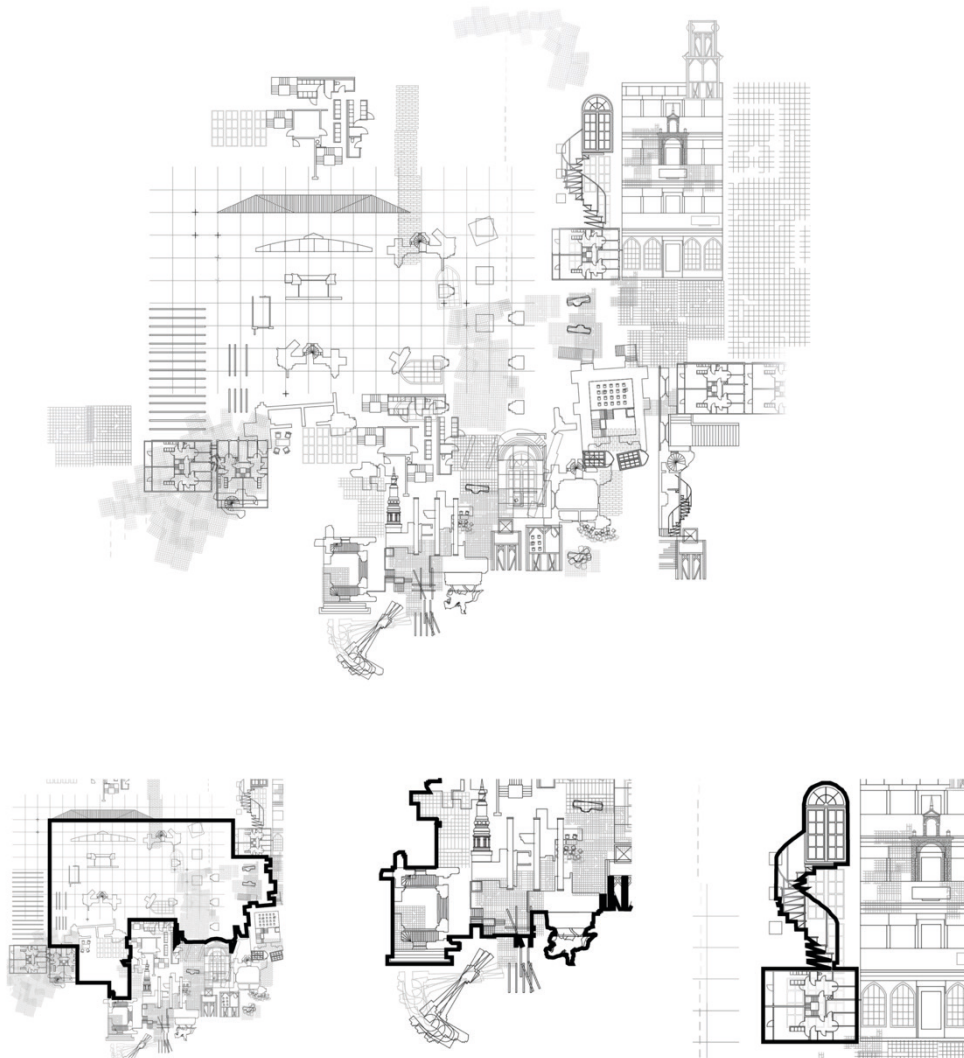
Fig. 04. Drawing Analysis of Operative Drawing 03, fictive context Copenhagen.
Top. Operative Drawing, Bottom from left to right: Void, Edge, Fragment
Source: Drawing by Ole Andreas Iversen (Student KOM, IBBL).

- *Operative Drawing*: Complex layering reveals interaction between different architectural periods and styles. The grid underlay is subordinate to baroque and modernist fragments.
- *Void*: Fragments arranged by grid structure define a complex plaza-like form
- *Edge*: The edge has a membrane quality; elements respond to conditions inside and outside
- *Fragment*: Alignment of sectional drawing to its corresponding plan flattens drawing hierarchy
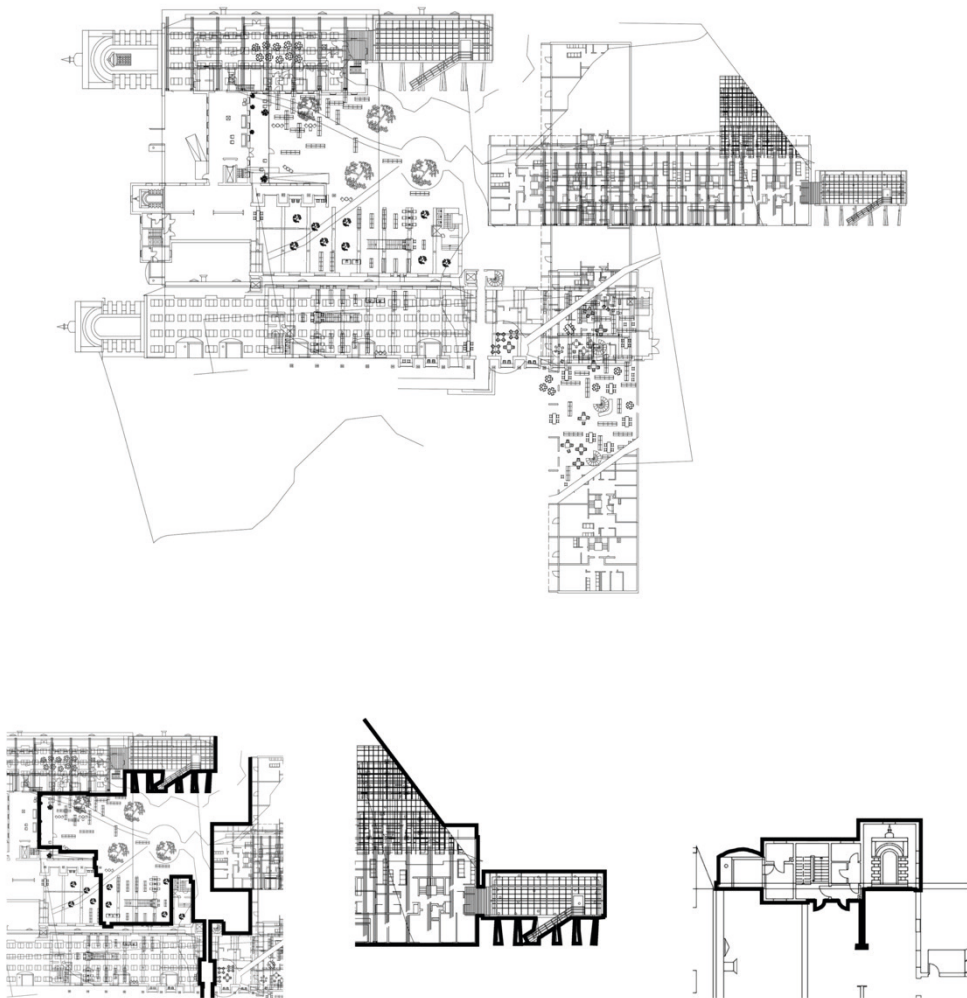
Fig. 05. Drawing Analysis of Operative Drawing 04, fictive context Copenhagen.
Top. Operative Drawing, Bottom. From left to right: Void, Edge, Fragment
Source: Drawing by Sebastian Hjortlund (Student KOM, IBBL).

- *Operative Drawing*: Describes complexity from furniture scale to the urban organisation of four building blocks capturing landscape within.
- *Void*: A semi enclosed landscape is contained by built structure, furniture elements mediate scale
- *Edge*: The edge has a strong geometry, directional quality, and outward reaching aspect
- *Fragment*: Merger of plan and elevation in tripartite composition has enfilade-like qualities

Conclusion:

The operative drawing technique exposed latent qualities within pre existing architectural contexts. These found qualities were subsequently applied within the imaginary space of the student's respective design proposals. Understanding of complex spatial arrangement prior to application within the designed 'context' of their own proposals afforded the students greater freedom and confidence. This process of reinterpretation and reuse was critical to their working method. A conscious shift from the purely imagined to a critical reflection and collage method. Plasticity of Scale, as an applied design exercise sought potential in contextual understanding. We hope the same imagination and analysis shown in the fictive drawings will be applied in real world contexts, where methods of radical reuse are necessitated by urgent environmental need.

We believe the drawings create, what we refer to as new context; without hierarchy or scale, time and space is gathered together, a layered composition of fragments to create a new whole. This technique, a reuse of existing architectural elements is designed as a means of heightening awareness and sensitivity to the potentials of the pre-existing condition. Imagination allows the incorporation of component parts, dissolving binary definition of new and old, instead prompting an affinity towards a reconciled whole. Within this learning 'context', 'existing' and 'new' are not opposing forces but seen as potential for understanding nature and culture as a single entity. We see this understanding of working with 'everything' as creation of context. A more developed understanding of this reading can be found in Bruno Latour's Facing Gaia;

> One thing is certain: the old role of "nature" has to be completely redefined. The Anthropocene directs our attention toward much more than the "reconciliation" of nature and society into a larger system that would be unified by one or the other. In order to bring about such a dialectical reconciliation, we would have to have accepted the dividing line between the social and the natural – the Dr Jekyll and Mr Hyde of modern history (Latour, 2017, P.120)

The operative drawings could include more than man made traces. If we want to create a deeper dialogue with nature, in accordance with Latour's thinking about nature and society as symbiotic, the next iteration of the operative drawing exercise, should incorporate other lifeforms in addition to the mapping of geological data and natural phenomena. This would point towards the exploration of a future nature.

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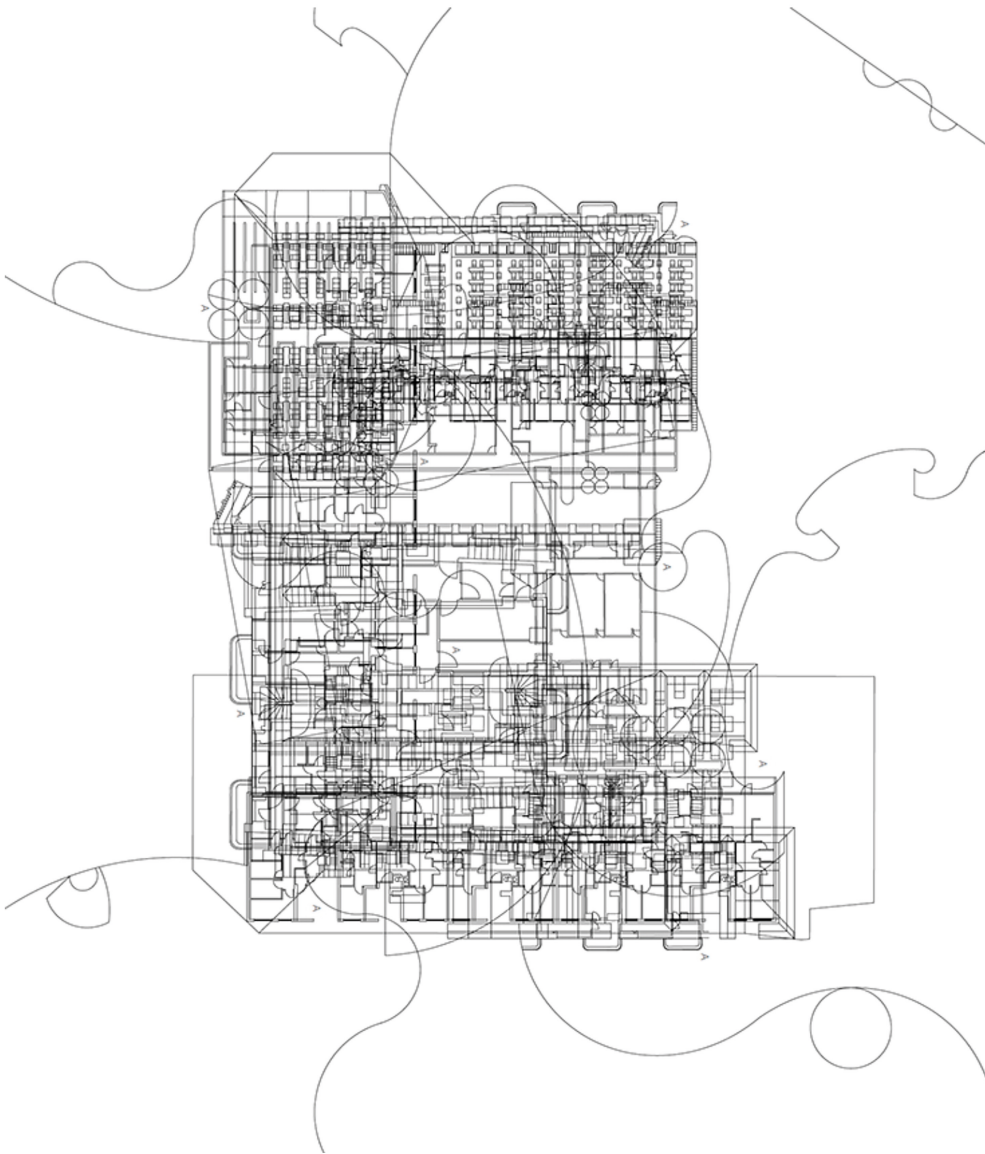Rowe, C. Koetter, (1983) F. *Collage City* Cambridge: MIT Press

Fig. 06. Operative Drawing 05, fictive context Copenhagen
Source: Matilde Lise Houmann (Student KOM, IBBL).