

# Assemblages and Built Form

## The Case of Secondary School Buildings in Cyprus

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**Abstract:** Traditional approaches to understanding built form & building typology tend to consider “space mainly as a shell or container, focusing on its morphological structures and functional uses” (Tornaghi & Knierbein, 2015, p.xv). Such consideration, however, ignores the complexity of physical form since it considers space as a container of action and a mere homogenous system. Thus, a more relational approach to space that embraces the embeddedness of various formal composition actions is required.

Thus, this paper aims to examine one of the most important ordinary building types in the urban landscape – school building – through a more relational approach to the consideration of urban form and built morphology. In that sense, this paper aims at addressing the extent to which school building type can be approached as highly relational system which is composed by both physical (i.e. dimensions, shape and size of the plot, functional composition etc) and with non-physical elements (i.e. agency, processes, social rules etc) in a constant process of making.

A selected school building built in Cyprus after 2000 will serve as case study. The case study is used to test in a certain building type the conceptual and methodological framework proposed to grasp the relationality of built form. The methodology implemented for this study examines spatial and social processes through formal, typological, spatial and functional analysis of the school unit combined with data from on-site observations of space usage. The analysis of the school building is extended over scales. It explores formal composition and social agency, school's plot and adjacent street network, school plot and the overall school spatial, formal and functional composition, social agency within school and space usage behaviours.

This study's contribution is the introduction of a consistent way of approaching architectural urban morphology & building typology through a multi-layered and non-hierarchical multi-scale methodological approach that offers a starting point for incorporating a framework of analysis able to capture complex socio-spatial relations and the role of agency in urban form emergence.

### 1. Introduction

In recent years, relational theories such as Assemblage theory and Actor-Network Theory (ANT) have transformed how we conceptualize, describe and analyse the urban form. Namely, relational theories have highlighted the mechanisms of emergence and transformation of city

form by recognizing the complexity of urban form as well as the importance of non-physical elements such as human groups, social actions or transpatial social decisions in the emergence of urban form. In that sense, there is a necessity to move away from the notion of space as a mere homogenous system and reach out to a relational ontology that considers space in 'terms of process, identity formation and becoming' (Kim Dovey & Fisher 2014, p. 59).

This paper attempts to develop a multidisciplinary conceptual and methodological approach that tries to address the relationality of built form. It also aims to highlight that built form is a dynamic entity composed of various socio-material parameters that are always in change.

An ordinary service building type that characterises the urban landscape, school building, is used as a case study through which the conceptual and methodological framework proposed is analysed and tested. School buildings in Cyprus offer a suitable case study, since they usually operate as separated islands in the city, while their formal structure is governed by social rules imposed by higher levels of administration and forms of agency.

The paper starts with a brief review of the existing body of literature dealing with the relational view of space. Then, the selected case studies and research methodology, followed by an explanatory analysis of the school's built form under investigation, aims to grasp built form emergence and is structured in 3 sections. Firstly, formal composition, plot properties and building density are discussed along with social guidelines inscribed in the building typology; secondly, spatial and functional composition are used so as to trace the ways in which the social programme and plot characteristics along with architects intuition work together to create a certain building form; thirdly, behavioural composition of the school is used so as to shed light to the ways the potentialities created by the school form are accommodated, used or shifted by means of agency and social control. The research's main findings, conclusions and suggestion for further work are then developed in a final chapter.

## 2. Assemblages and Building Morphology: A conceptual framework

Morphology refers the study of the physical form or the science of dealing with the very essence of forms (Bullock, *et al.* 1988). In the context of the built environment, urban morphology tries to conceptualise the complexity of the physical form and contributes to a better understanding of the physical complexities of cities at various scales (Larkham, 2005). As summarised by Oliveira (2016), urban morphology deals with urban complexity, which is structured according to a set of different elements such as urban tissues, natural context, street network, plot and building systems that are examined to increase resolution.

However, as Tornaghi & Knierbein (2015) stated, conventional approaches to the investigation of built form tend to ignore the ever-changing character of space and the on-going dynamics that occur beyond the apparent physical structure. In fact, as stated by Tornaghi & Knierbein (2015) such approaches tend to understand and analyse space mainly as a container of action and therefore they tend to focus only on its morphological properties and functional uses.

For these reasons, in recent years relational theories have transformed how we conceptualize, describe and analyse the urban form. Theories such as assemblage theory, actor-network theory and mapping controversies emphasise on the process of emergence, while they underscore the importance of considering associations of human and non-human elements. In fact, they highlighted the necessity of understanding the complexity of urban form as well as the importance of acknowledging not only physical elements, but also social elements such as human groups, social actions, transpatial social decisions etc in the emergence of the built form.

The discussion about the relational view of spaces goes back to Lefebvre's (1991) conceptions about the spatial triad. Lefebvre understands space through a three-fold division: the *perceived*, *conceived and lived* space. For Lefebvre, *perceived space* has socio-spatial significance and refers to the spatial practice which in a fact a social product. *Conceived space* is the representation of space and it is bounded to papers, elevation and perspectives. Finally, lived space is the representational space that is experienced through its association with images and symbols. Similarly, Harvey's (1973) classifies space into *Absolute*, *Relevant and Relational*. The *absolute space* refers to a stable and unchangeable space, *relevant space* is related with Einstein's work and non-Euclidean geometries, while *relational space* is in fact the space that does not exist outside of the process of its making and considers the simultaneous existence of the various actors involved.

The relational view of space is also famously traced by the concept of Assemblages proposed by the work of philosophers (Deleuze & Guattari, 1987). Assemblage is a mode of ordering relational and heterogeneous entities to work together for a certain time period to form a new whole. In that sense, assemblages are productive, since they constitute aggregations of different elements linked together to form a new whole. Assemblages are relational and heterogeneous where there are no pre-determined hierarchies and thus they constantly produce new behaviours, new territorial organisational, actors and realities (Müller, 2015). However, the properties of an assemblage are irreducible to the properties of its parts. In that sense, a part can be detached from an assemblage and be attached to another. Thus, assemblages are defined both by the variable role of their components and the synthesising process in which the various components are involved. Specifically, the variable role of the components is addresses by means of their *material or expressive* nature, while their synthesising process is addressed through the processes of territorialisation and deterritorialisation. Territorialisation is the process that stabilises the identity of an assemblage, whereas deterritorialisation destabilises its identity.

Elaborating on assemblage thinking, DeLanda (2006) developed a theory of social assemblage. De Landa argued that social entities are in fact social assemblages and emerge by means of the interaction between heterogeneous elements. DeLanda argued that social assemblage can be used so as to understand and analyse complex entities such as cities. Specifically, he argued that cities can be approached as assemblages of both social and physical elements (i.e. people, networks, buildings, streets). The emergence of which involves various scales (not just the micro and the macro scale).

In a similar line of thought, Actor-Network Theory is interested in the socio-spatial ordering of entities beyond one universal principle (Müller, 2015). Actor-Network Theory constitutes an approach to social theory that emerged in the mid-80s primarily by Bruno Latour's work. Latour (2005) argued that society can only be considered as a type of connection among things that are not themselves social. In that sense, both human and non-human elements are particularly important in the investigation and understanding of the social, since both are approached as equally important in the emergence of the social (Latour, 2005). Therefore, in Actor-Network Theory scale is usually defined by means various actors' connectedness at multiple scales (not only micro and macro) (Charalambous & Geddes, 2015).

Departed from an Actor-Network perspective, Yaneva (2012) examined controversies behind the built environment. Yaneva argued that buildings cannot be considered merely as completed objects but rather as dynamic entities that cannot be viewed outside of the process of their making. In fact, building for Yaneva must be defined as dynamic networks that include the object, the actors, the association, influences, agreements, disagreements and all controversies evolving in time. However, as argued by Capille and Psarra (2015) Yaneva's focus is "almost exclusively in what is communicated about architecture in the

media” and thus her work is unable to offer a solid explanation how the use of architecture operates as a network.

It can be argued therefore, that such a framework can offer an alternative perspective in the understanding of built form & building typology, since it reveals the importance of acknowledging the complexity and relationality of built form. This relational view of the space can offer the possibility to understand built form not as a mere physical system but as an interaction with the otherness, as multiple, incomplete, different and always in the process of making (Tornaghi & Knierbein, 2015). However, as pointed out by Avidikios (2010), relational approaches present some methodological difficulties, since are mainly based on rather speculative accounts of phenomena. Additionally, the spatial context in which the various actors are situated and operate remained unaddressed, since space is approached as “endlessly malleable substance which takes its form only from the social and economic process” (Hillier, 2014, p. 3).

In an effort to enhance the methodological toolkit of relational theories, Charalambous and Geddes (2015) claimed that space syntax theory and method that explores the ‘living relationality’ of space can positively enrich relational theories and can offer additional methodological insights for the exploration of relational systems. Space syntax theory proposed by Hillier and Hanson (1984) acknowledges both spatial and social systems as highly relational. Specifically, according to Hillier and Vaughan (2007) Space Syntax, by considering spatial systems in a configurational way, is trying both to reflect on the objectivity of space and to anticipate the intuitive engagement of humans with it. In that sense, can offer a theoretical and methodological framework which can analyse space in a wide array of scales and at the same time by considering the social phenomena in the light of their spatial descriptions can potentially decode various social actions through their spatial descriptions.

Therefore, by taking into account the aforementioned theoretical and methodological insights suggested, the following points could be pointed out:

- Relational theories suggest that the built form should be considered a relational socio-material system composed of heterogeneous pieces that create a whole. However, the characteristics of the whole are not defined by the characteristics of the parts, and therefore the built form should be analysed both as a system with different parts as well as a single entity in a constant process of making.
- The built form should ideally be examined at different socio-material scales (not only on micro and macro scale) and across time. In other words, relationality across scales and time in a non-hierarchical manner should be adopted so as to capture complexity, emergence and temporality of socio-material constructs.
- Relational, socio-material entities consist of both physical-spatial and non-physical elements, elements that have to be taken into account for the analysis and investigation of the system.
- Spatial elements and physical properties should be considered, since they constitute such a complex system's main visible aspects. In this investigation, space syntax conceptual and methodological framework can assist in describing and analysing both the physical as well as the social aspects of space. Additionally, by adopting methods of systematic observation of human behaviour, proposed by space syntax theory, additional evidence for social – human activity and agency in space can be obtained. In that sense, quantitative and qualitative types of data should be used in order to address the complexity of socio-material systems.

By taking into consideration inferences depicted by the review of literature, this study develops a conceptual framework able to render the relationality of built form through various socio-material frames. In fact, it proposes a dynamic illustration of socio-material conditions across scales that describe a certain aspect of the built form at a certain point in time. Figure 1 illustrates the proposed conceptual framework in which social and spatial aspects are plotted on x and y axis respectively. X-axis accommodates social actions, processes, actors, decisions which operate both above and within space. Processes that occur above school such as decision by authorities are located on the right side, while local actions and interactions on the left side. Similarly, material-spatial parameters are placed on the y-axis. Wider spatial relations such as the location of the school within the city are placed on the upper part of the diagram, while more localised relations such as the formal and functional composition of the school unit itself on the lower part. This classification can vary according to the building typology under investigation and can also be used at different points in time.

This strategic placement of both social and material-physical aspects on a single diagram provides a way to visualise a dynamic relationship between factors that operate either within space or above space at various scales, either social or spatial. Therefore, the shape and the size of the diamond visualise the socio-material condition and the relationship between the scales of the interventions.

### 3. Methodology & Case Studies

The methodology implemented for this study combines various methods and techniques of analysis so as to trace a dynamic built form and avoid a linear understanding and hierarchical reading of phenomena.

An ordinary service building type that characterises the urban landscape (school building) is used to test the proposed conceptual and methodological framework proposed. School

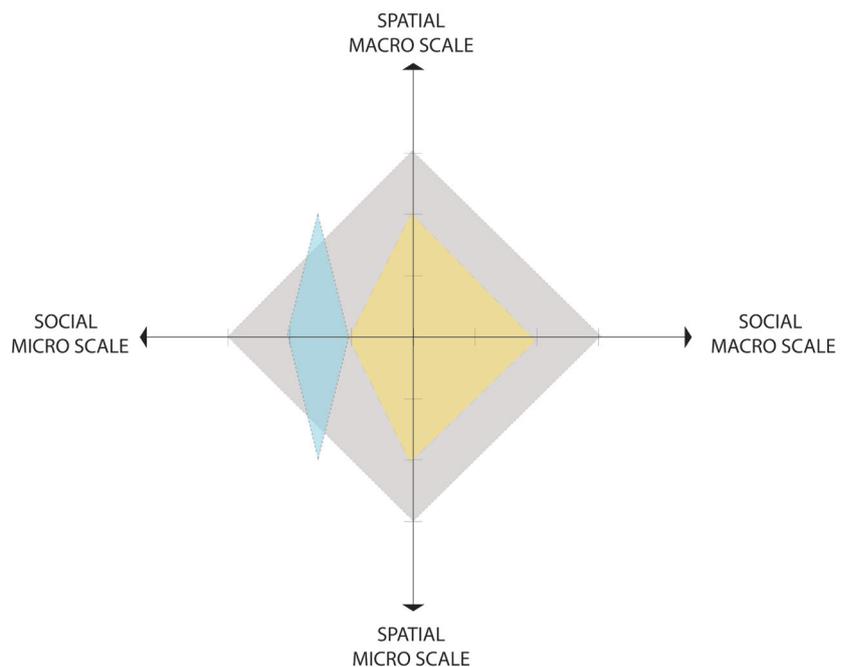


Figure 1. *Conceptual Framework of Analysis that captures relationality of socio-spatial factors across scales. Grey shades illustrate possible socio-material frames that could be examined.*

buildings in Cyprus offer a suitable case study due to the fact that their formal structure is governed by social rules imposed in the design process by higher levels of administration and forms of agency. At the same time, their horizontal development (they usually cover a large amount of a single city block) forces school buildings to act as separated islands in the city landscape since their interface with the street is minimised by means of fences and boundaries due to safety reasons.

The selected school under investigation is located in the city of Pafos, the western part of Cyprus. The school was built in 2002, has a medium size with approximately 448 students and students to teachers ratio 8.77. The school is characterized by a wide range of students' countries of origin, since only 28% of the students are Cypriot citizens. As a matter of fact, approximately the half of the population of the school comes from non EU countries (46%) and 26% from EU countries.

The methods implemented so as to understand school building typology and grasp the emergence of socio-material entities across scales and time are the following:

1. Segment map analysis borrowed by space syntax methodologies for the analysis and investigation of the spatial structures of the city. Segment analysis derives from an axial line map which represents the potential lines of movement in an environment. Long axial lines broke into smaller segments at every intersection point so as to better capture the lived relationality of space. The measure of choice is particularly important since it depicts the potentiality for through-movement choices (higher choice depicts spaces with higher potentiality for being chosen as a movement path). The best predictor of vehicular & pedestrian movement proved to be Normalised Angular Choice (NACH) which gives a deeper understanding of spatial morphologies of cities (Hillier *et al.*, 2012) and uses the least angle change as the definition of distance. This method was also used to capture the school unit's spatial structure and movement potentialities as suggested by Sailer (2018).
2. Axial map analysis is used to identify layout's spatial intelligibility. In space syntax terms is the correlation of axial connectivity and axial global integration, where high intelligibility depicts a layout which can easily be read from its parts..
3. Formal analysis of the building typology under investigation.
4. 'Spacemate' diagrams, proposed by Berghauer Pont and Haupt (2004) which examines the relationship between density and built mass, is used so as to capture the building density of school scheme. It relates geometrical properties of a building such as the floor space index (FSI), ground coverage index (GSI), relative number of floors (L) and open space ratio (OSR). OSR is not considered here since as claimed by Steadman (2014) OSR is just another way of expressing the same data. The diagram plots on the y-axis FSI and on the x-axis GSI and the diagonal line illustrates the L values (the relative number of floors per scheme). Berghauer Pont and Haupt analysis highlighted that 'what to the eye seem to be similar morphologies become clustered within separate regions of Spacemate' (Steadman, 2014, p346).
5. Functional analysis of the different functional clusters assembled.
6. J-graphs & ABCD spaces analysis that visualise the relationship between functional clusters of the system. In space syntax, J-graphs are usually derived by convex map analysis and illustrate the relationships between various spaces and the movement potential between them. In that sense, spaces are classified into A,B,C,D spaces. A spaces are dead ends, B spaces have two connections and usually lead to an A space, C spaces have two or more connections and lie on a single ring, D spaces are lying into two different rings.

7. Schematic visualisation of the social programme given by the authorities and spatial representation of the relationships inscribed in the programme.
8. Empirical methods for capturing space usage behaviour suggested by space syntax observation manual (Grajewski and Vaughan 2001) combined a) qualitative feedback and b) snapshots method which in space syntax is the method that captures stationary, moving activities and interactions between user groups.

By layering the results of the various analysis, the paper aims to assess the interactions between transpatial and spatial elements that lead to the emergence of the built form and address space complexity and relationality.

#### 4. Analysis – Results

##### 4.1. Multiscalar Socio-Spatial Analysis: Building Typology as a Temporal Relational Socio-Spatial Structure

Drawing on existing research and elaborating on the conceptual framework proposed, this chapter aims at highlighting the ways through which relational ontology can be addressed. Figure 2 shows the frames created for the investigation of the school building typology. Frame 1 is a wide frame which includes all socio-material factors involved in the emergence of school build-

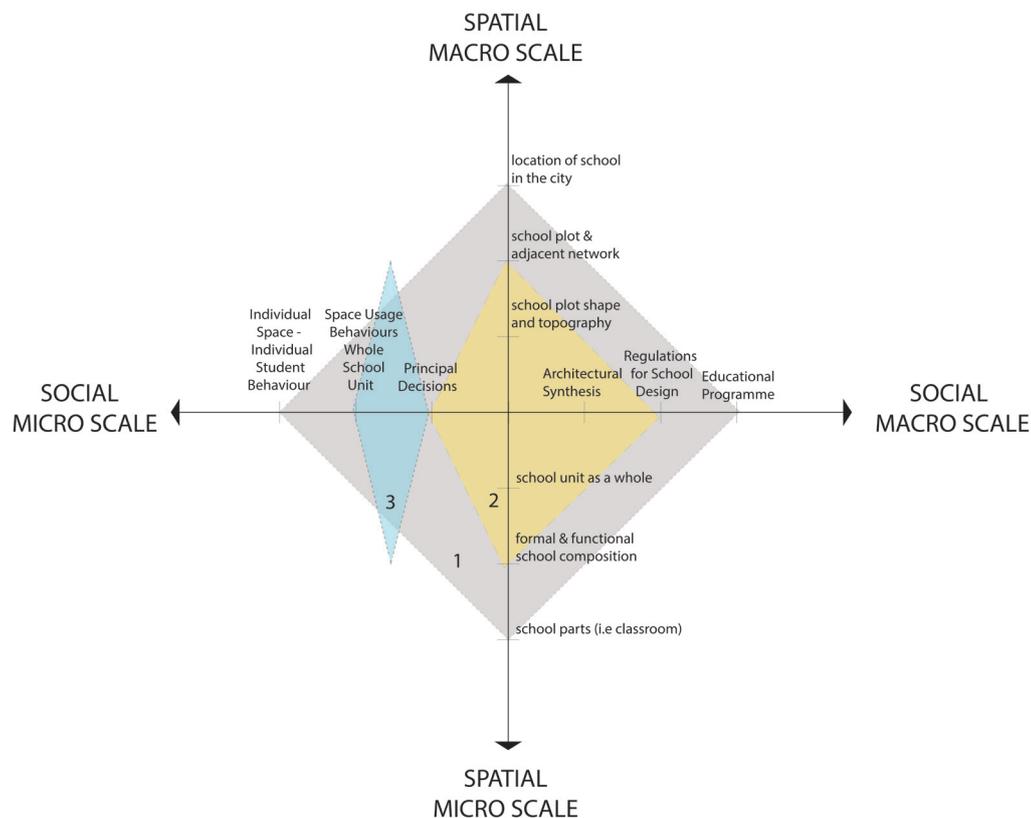


Figure 2. Socio-Material frames considered so as to understand and examine the morphology of schools.

ing typology (i.e the educational programme that defines to a certain extent requirements for the design of schools (Blackmore *et al.*, 2011), the location of the school in the city e.t.c). Through this frame, this study explores: Formal Composition, plots' characteristics & building density: Assembling closed and open spaces, social guidelines & regulations. Frames 2 & 3 are much more condensed frames and explore the relationship between built form, human behaviour and agency. Through those frames, this paper studies and Spatial & Functional Composition: Assembling social programme & plots' characteristics and Behavioural Composition & Emerged socio-spatial structure: The role of agency in socio-spatial territorialisation and potentiality of built form respectively.

#### 4.2. Formal Composition, Plot's Properties & Building Density: Assembling closed and open spaces, social guidelines & regulations

This section examines the location of the school building in the urban context, plot's properties and building density, and regulation and social agency operates above space and do determine to a certain extent the school structure as a whole. The analysis is conducted in three distinct stages: a) segment analysis of the urban network in which the school is located, b) formal analysis of school unit c) building density.

Figure 3 shows school plot's location within the urban network as well as the potentiality of the adjacent network to attract movement flows. Specifically, Figure 3 shows segment analysis of the urban network and the metric used is normalised angular choice which models the routes with less angle change and depicts the segments with the highest opportunities for being chosen as movement paths from any single location to all other locations. Thus, it can be seen that the school is located in a part of the city that has high potentials of being chosen as a moment path either for vehicular as well as for pedestrian movement. This is particularly important in this case, since more than 58% of the school plot is covered by street network.

The vast majority of school's built structure of the school is attached to the adjacent street segment with the highest choice value. Only the right part of the school accommodates the various functional units organised around structured open-air circulation units & smaller court-



Figure 3. Segment Analysis showing the distribution of Normalised Angular Choice; segments in cooler colours have lower NACH values, while segments with warmer colours have higher NACH values.

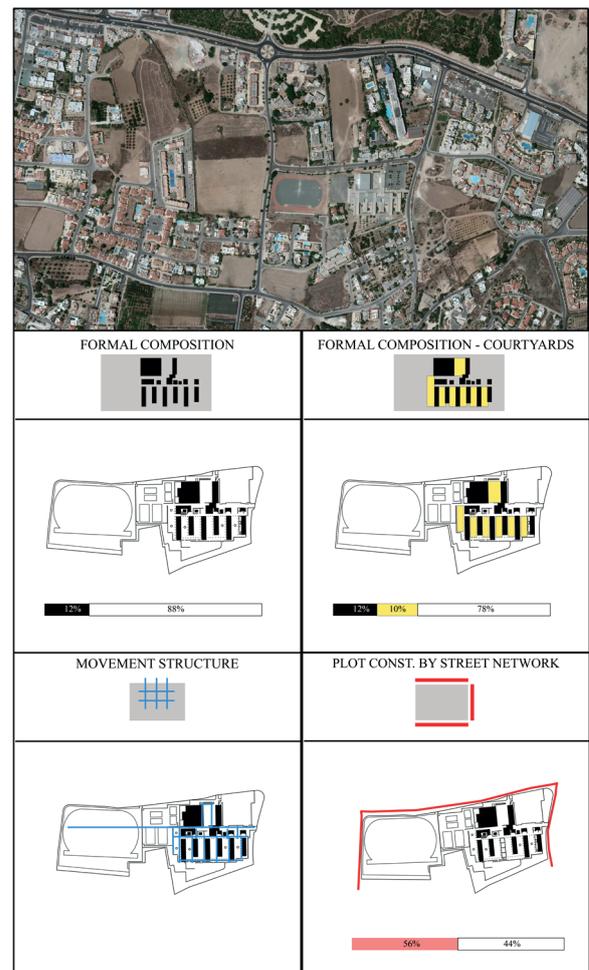


Figure 4. *Formal composition and main structuring principals.*

yards. Apparently, the majority of the school plot is open (88%), since only 12% of the school unit has closed areas.

In order to investigate more precisely the building density, this paper uses the spacemate diagram proposed by Berghauer & Haupt (2004). Figure 5 summarises the main values considered and presents the spacemate diagram in which the school building typology is positioned. The analysis shows that the school building typology is relatively very low on the diagram that can be considered a by-product of the relatively small percentage of buildable areas and the schools' open-air structure in Cyprus. The open-air design of the schools in Cyprus can also be considered a by-product of the weather conditions on the island and the standard dimensions of the outdoor sports area, which covers almost half of the school plot. Lastly, this structure seems that derives by the authorities' regulations, which specify that secondary schools should be maximum 2 floors, with an open-air structure and 50% of the functional distribution on the ground floor.

#### 4.3. *Spatial & Functional Composition: Assembling social programme & plot's characteristics*

This section examines the synergies between functional & spatial composition of the school, plot shape, size and topography, regulations given by the authorities for the design of secondary

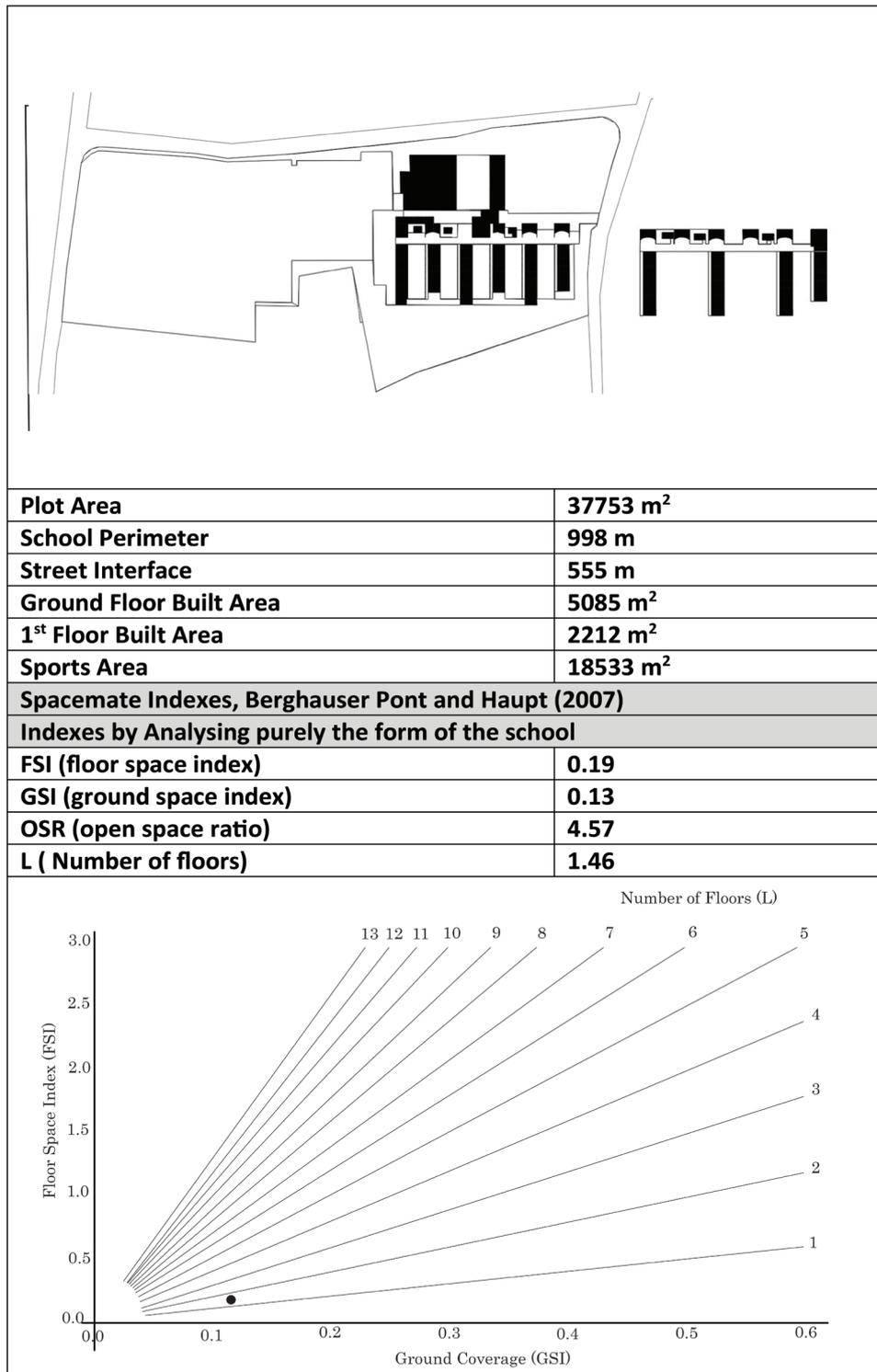


Figure 5. School Building typology positioned in Spacemate diagram.

schools in Cyprus, as well as architectural decisions. The analysis is achieved by implementing 3 different methods of analysis: a) conceptual representation of the programme given by the authorities b) functional mapping by classifying the building into various functional types (i.e classroom, special classroom, staircase, e.t.c), c) J-Graphs and a.b.c.d space analyses which cap-

ture the relationship between functional clusters as well as d) spatial-configuration mapping by means of segment analysis as suggested by Sailer (2018).

Firstly, the figure below conceptualises the physical-analogue representation of the programme given by the authorities in Cyprus for the design of every new secondary school building. The programme suggests creating 5 functional clusters closely articulated with each other by means of the outdoor space, circulation and courtyard. Into more details, the functional composition is divided into: entrance areas (1), administration and teachers areas (2), sports and multipurpose facilities that should be used by the wider community as well (3), outdoor areas, circulation and courtyards (4), classrooms, special classrooms, secondary and remote administrative facilities (5).

Based on the programme's visual representation, Figure 7 visualises the functional composition of the building being classified as suggested by the given social programme. At a glance it can be seen that the functional allocation followed the formal composition of the school as well as the unique plot characteristics. In fact, the outdoor sports area is accommodated on the lower level of the school and has significant height difference with the rest of the school, while it is 100% monofunctional. The rest of the school plot accommodates all the other uses which are organised in various functional clusters, where each morphological stripe accommodates a certain function. A central role for this building typology seems that plays the circulation spine of the system that connects all the functional clusters (figure 7).

The relationships between functional clusters can be further explored by means of J-Graph analysis. Figure 8 shows that the sports area is located 6 steps away from the administration area and school entrance, while it constitutes an a type of space which means a dead end. At

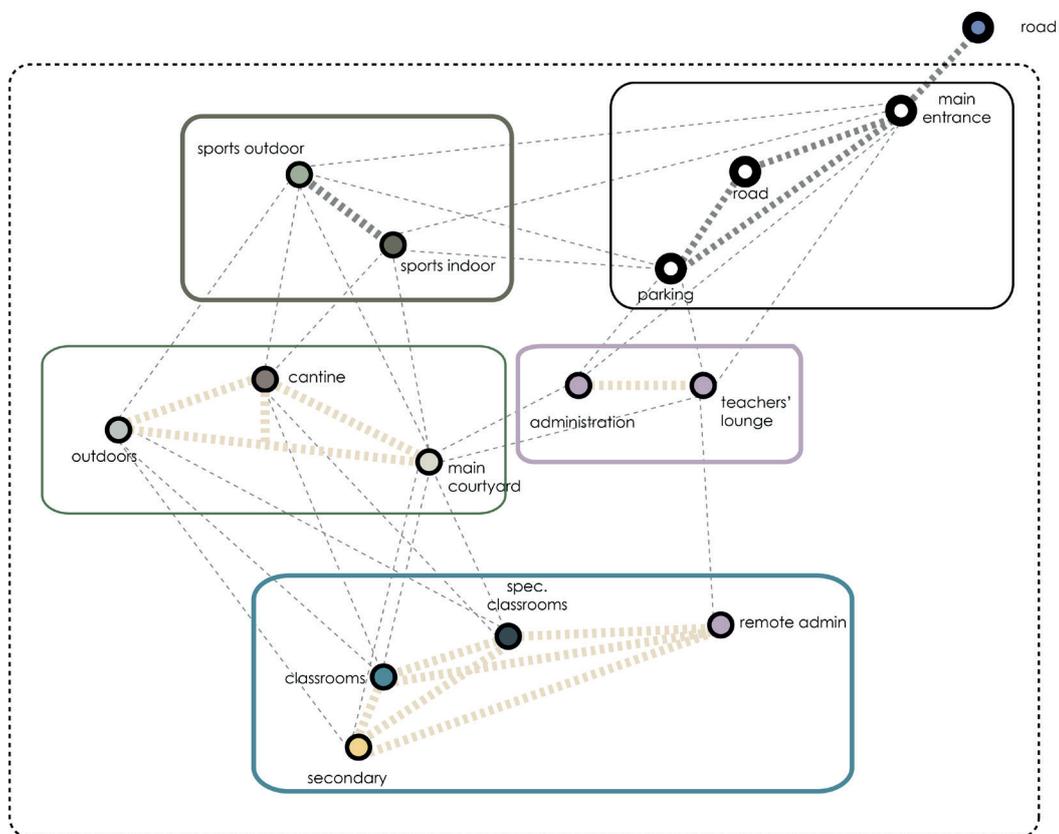


Figure 6. Conceptual Visualisation of the functional relationship that are suggested by the general guidelines given by authorities for the design of secondary schools in Cyprus.

the same time, the courtyards and circulation units on the ground floor are D types of space. This means that are spaces that offer high potentiality of movement choices and thus can work as connections that can potentially stitch together the various functional clusters. This can be further understood by considering segment analysis (figure 9). Segment analysis of the school structure depicts the two main movement corridors as the segment with the highest angular choice and thus could possibly offer high potential of movement in the overall structure of the school, since they are spotted with mainly red colours.

However, despite the two main movement corridors seems that work pretty well with the overall architectural synthesis, the school layout appears to be very unintelligible and relatively deep. In fact, the axial intelligibility of the layout is 0.20 which means that is very hard to read the overall structure of the school from its parts. This is might probably a by-product of the horizontal development of the school, the plot shape and topography along with the architects

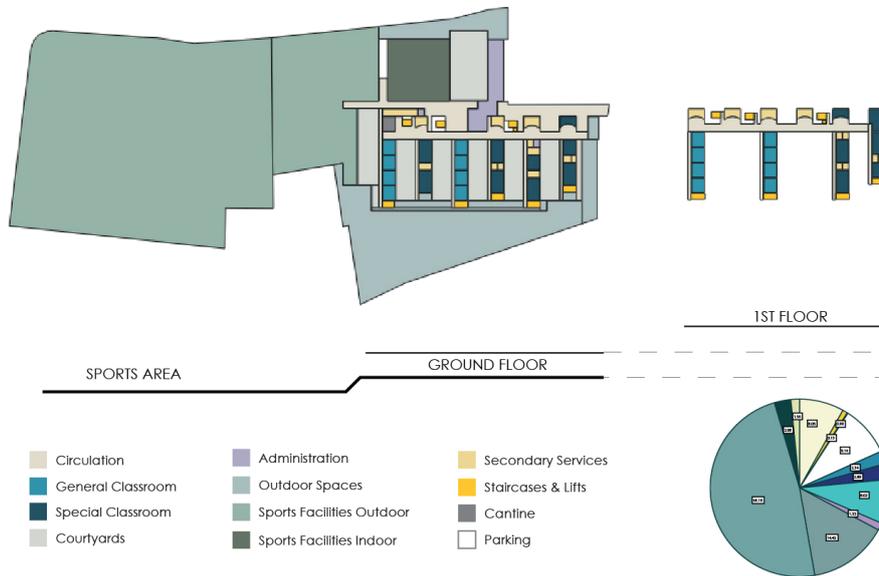


Figure 7. *Functional Composition of the school – Functional Clustering along topography of the plot.*

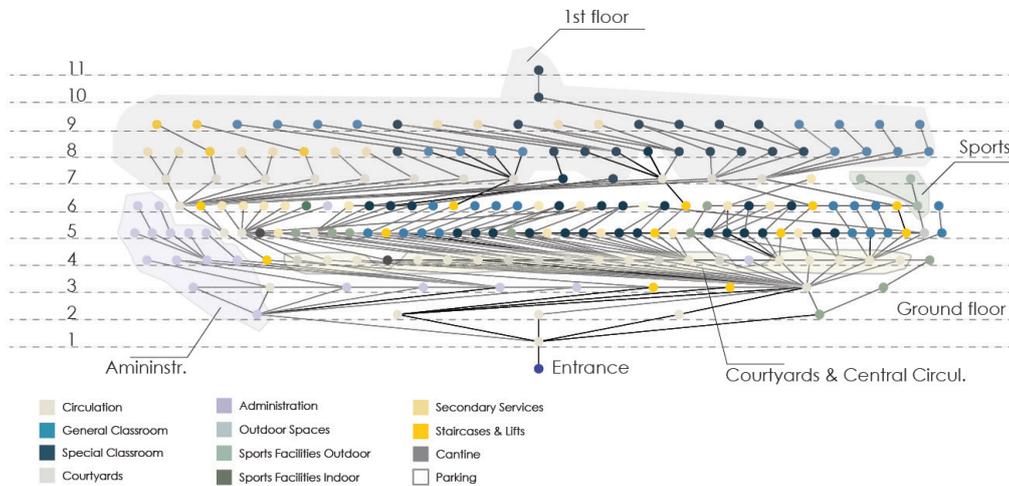


Figure 8. *J-Graph of the relationships between functional clusters from the entrance of the school.*



Figure 9. *Spatial Composition, Segment Analysis, Normalised Angular Choice.*

intention to locate the main school unit on the one side of the plot and the sports area on the other side of the plot and thus dividing the school unit into two completely different parts.

#### 4.4. *Behavioural Composition & Emerged socio-spatial structure: The role of agency in socio-spatial territorialisation and potentiality of built form*

This section explores challenges further the flat ontologies of space by studying human spatial behaviour and agency. In fact, it hypothesises that the spatial, functional, operational parameters influence to a certain extent agency in space and power relations which in turn determine to a certain extent territorialization process and potentiality of built form.

Figure 10 highlights the density as well as the location of the different user groups within the school during normal school breaks (non-programmed behaviours). From the observation of human spatial behaviour appears that the main movement corridor – the spine of the morphological structure of the school – operates as the core of human spatial behaviours (concluded also by the segment analysis). Also, it is apparent that there are no recorded users in the sports' area, while the majority of users is mainly associated with the main building core. There is also strategic positioning of teachers in various points of the school.

Figure 11 shows the users composition in each functional cluster, while the size of the pipe represents the relative area of the functional clusters. Apparently, the vast majority of functional clusters accommodate both genders, while only in two cases seems that the areas are mainly accommodated by single genders groups. This happens with the area with the adult playground equipment which accommodated mainly male users and a part of the circulation unit close to administration area which accommodates mainly female groups. Interestingly, even though the sports area is the biggest only one type of user can be found, teachers.

In that sense, this controversy has been revealed by means of observations of human spatial behaviours, while users' qualitative feedback helped so as to trace the reasoning behind. Specifically, principal's qualitative feedback highlighted the issue of school's building and grounds safety (Pashiardis, 1997) as one of the primary factors that affect school leadership. In fact, the principal argued that by means of his power authority restricted students and teachers' zones of operation and thus prohibited the usage of the open-sports area during the school breaks.

This dynamic mapping highlighted that principals' actions influenced students' distribution in school as well as the spatial potentiality of school structure. In fact, the social rules applied achieved shrinkage of the open space available for students, while differentiated the relationship between built and unbuilt space and therefore influenced students' and teachers' zones of operation. This can be further understood if we reconsider the location of the school in the spacemate diagram with the new analogue of built to unbuilt area (figure 12). As it can be seen the location of the school in the diagram has shifted upwards.

Apparently, in cases where the relationship of functional allocation, topography and plot shape cannot offer spatial surveillance by articulating an intelligible layout (Axial Intelligibility of the school is  $R^2=0.20$ ), social rules and micro-practices of power can be applied so as to

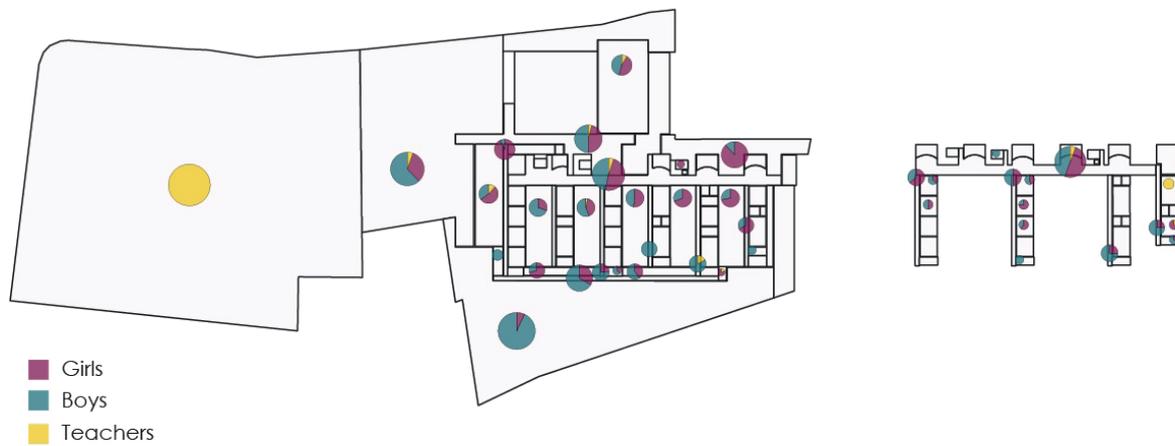


Figure 10. Behavioural Composition of the school – Group Formation & Densities.



Figure 11. Behavioural Composition of the school – Group Composition in functional clusters (the size of the circle represents the area of the functional cluster).

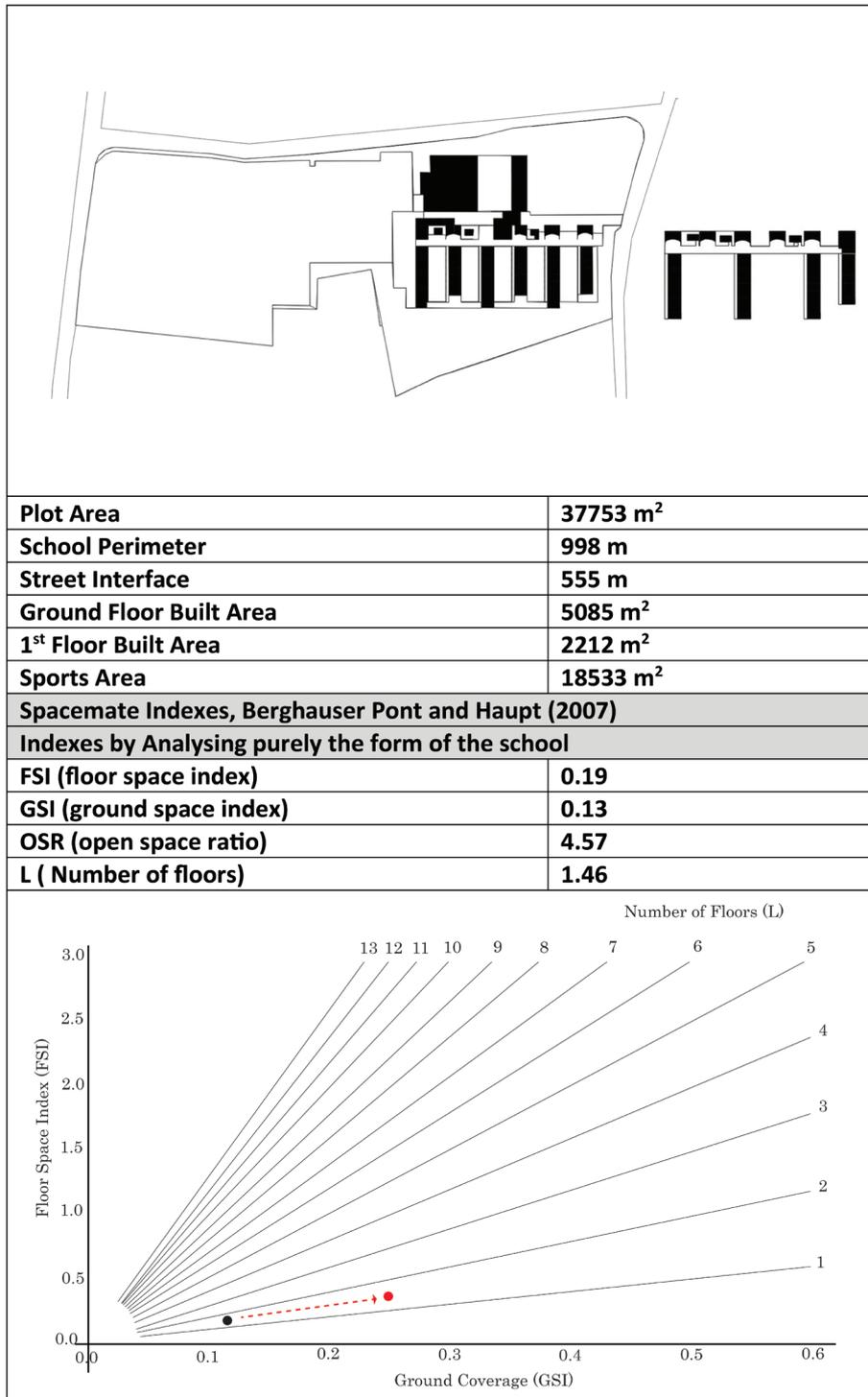


Figure 12. Spacemate diagram which shows the different positioning of built form in the diagram achieved by considering power relation and social agency in space.

restrict the potential zones of operation and thus achieve a new territorialisation of material and immaterial aspects involved and shape built form. Thus, built form cannot be considered as a fixed and complete object but rather as a complex object with spatial potentialities being reformed at any point in time.

## 5. Discussion/Conclusion

This paper aimed to provide a theoretical and methodological framework to conceptualise and quantitatively examine the ways in which relational theories can inform the study of urban form and building typology. Based on the review of existing literature and by considering the school building as an assemblage of various material and immaterial aspects across scales, this paper uses various methods and techniques so as to grasp the relationality and complexity of built form which is in a content process of emergence.

Conclusions suggests that “space [has to be considered] as constantly changing, as an outcome of the specific mutual relations between people and places and their contexts” (Tornaghi & Knierbein, 2015, p. 244). Arguably, the analysis highlighted that despite the fact that the physical form of the school building itself, as well as the location of the school building in the wider urban context didn’t change, different socio-spatial dynamics were generated challenging the ‘flat’ ontologies to space. In that sense, it is becoming apparent that micro-practices of power should be integrated into the investigation of built form so as to be able to understand and capture ‘the ways productive self-organised assemblages emerge from dynamic interactions between parts’ (K Dovey & Fisher, 2014, p. 59)

The contribution of this study regards the simultaneous engagement of a wide array of methods that examined building typology as a socio-material construct across scales and were able to grasp the relationality, temporality and complexity of the built form. Additionally, against a hierarchical view of built morphology, this paper suggests that built form should be studied by investigating the socio-material relationship. Thus, it proposes a non-linear examination of built form that uses various socio-spatial frames across scales that capture a certain condition each time (i.e transpatial decisions about the school’s location, the spatial and functional configuration, plot access, plot shape and geometry etc).

Limitations of this study include a restricted number of observations, yet small enough to draw conclusions. Ideally, this study would be repeated in other school building typologies across Cyprus and provide additional analytical and empirical data. Further explorations could also shed additional light on the relationship between street network, street plot, social actions and school usage patterns. Lastly, further elaboration of J-Graphs for the investigation of both spatial and social networks could benefit the research of relational built morphology.

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