NUMBER

Title ECOPSYCHOSOCIAL PARAMETERS AND MENTAL HEALTH:

the complexities of the psychiatric ward

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ABSTRACT

Mental illness historically has followed an uneven path regarding the social integration and the therapeutic priorities of mentally ill people. This was reflected in the institutions that provided for mental illness, with emphasis shifting between custodial and somatic priorities. Gradually, mainly in North America and most European countries, big institutions have been replaced by networks of smaller facilities, known as community care, which introduced the psychosocial model prior to the pre-existing jurisdictional and medical models of treatment and care. These new environments display great variations in policy, service provision and care regimes, even in the same area. Architectural typologies for psychiatric facilities follow this experimental pattern. That hindered the creation of an established, evidence based methodology for psychiatric spaces. The gap was addressed with a patient-focused model, specifically designed for psychiatric facilities, the SCP model. It used methodologies of social medicine, corresponds to the 3 main care models of psychiatry and has been applied in several European contexts. It aids set a red line for medical planners and designers and the identification of areas for further research.

A key area identified by the application of SCP model on awarded psychiatric buildings was the lack of understanding on the influence of ward layout to patient wellbeing. Following that, this research aims to promote our understanding of psychiatric space and help us promote our understanding on the mechanisms of the built environment against total institutions and their institutional practices.

The locus comprised 2 acute psychiatric wards in London, belonging to different Mental Health Trusts, all part of the public healthcare sector. Each was evaluated using the SCP model, to identify the relation between policy, care regime and patient-focused built environment. Parallel, a syntactic analysis identified the social logic of the wards' layout, in terms of hierarchies for the two main user-groups patients and staff, staff's control of the ward in terms of supervision and patient privacy.

The juxtaposition of medical architecture and space syntax provided new insights on how psychiatric space is used, as the analysis of the area surrounding the nursing station indicates. The different approaches regarding the gathering of people outside the nursing station, from institutional (unstructured behaviours or unrest) as interpreted by medical architecture to an expected social interaction to the most integrated point from the syntactic perspective, indicated that there is a new potential from the combination of the

two methodologies. From the paper, it occurs that Space syntax could unearth underlying issues of social interaction and then the medical architecture methodologies could interpret these issues in the context of the therapeutic regime. That way, we can reach a better understanding not only of how medical spaces operate but provide new insights on the therapeutic regimes.

KEYWORDS

Mental health architecture, Space Syntax, Health care buildings, psychiatric spaces, mental health facilities

1. BACKGROUND

The concept of mental illness in the west, historically, presents great complexity. It has been interconnected with the cultural, socio-political and religious values characterizing each era and even, in some cases, it has been influenced by the key economical drivers. Healthcare facilities have always been reproducing the system of care and represented a reflection of its values (Marcus, 1993). One of the formative elements of psychiatric architecture as a result of these social values has been the stigma associated with mental illness (Goffman, 1961; Foucault, 1964; Pevsner, 1976).

Stigma is a parenthesis in the history of mental illness as at the onset on western medicine (Chartocolis, 1981), somatic theories were the norm yet this parenthesis occupied the clear majority of the period starting from St Augustine (Chartocolis, 1981; Georgiou et al., 1993) to the age of Second confinement (Abatzoglou, 1995) leaving remnants that still create undercurrents in the psychosocial integration of the mentally ill even in the western context, as the process for the social reintegration of the institutionalised patient is about half a century old. These undercurrents might be present even inside the healthcare systems, create internal inequalities, influence policies and find pathways in all parts of a system including staff (Sartorius, 2007), with the building stock related to mental illness – which is the main subject of the paper -- proving no exception. For those reasons, it is very important to acknowledge their origins and presence and be aware of these potential undercurrents in any layer of psychiatric related research including this of the built environment.

In this uneven trail but consistent in the dominance of stigma, we could detect a shift from the initial somatic perception of the illness to more socio-political, which in fact was corresponding to a shift of power from the doctors, be it Hippocrates or Pinel (Georgiou et al., 1993; Vavyli 1992), to judges(Cavadino, 1989; Cayla 1992) and resulted in a custodial way of dealing with mental illness, which comprises the jurisdictional model of mental health provision. This duality between a disease and a threat became even more obvious after the establishment of psychiatry, where the religious assumptions connected to the illness started to disappear, yet important elements of the socio-political barriers and especially those related with the rights of the mentally ill in our society. For example, even in countries that considered pioneer in Community care, the police as opposed to the A&E department of the general hospital might still be the first point of contact with the health services including the police car instead of the ambulance being the transportation vehicle, and its projection as bare from any furniture seclusion rooms or padded cells inside the psychiatric wards (Care Community Commission, 2015), and the dynamics of the institutions (Mental Health Act, 1983; Department of Health, 2014; Born et al., 2014). In

this paper, the field of medical architecture, salutogenic architecture or therapeutic architecture --a discipline of evidence based design linked closely to the concepts of physiology and perception of the disease in relation to space and place and in close methodological links with medical sociology—approaches space syntax as the theory that can provide insights on socio-spatial dynamics and possibly identifying undercurrents of stigma in the psychiatric establishments. Therefore, it is important to familiarise the reader who is not necessarily familiar with the psychiatric regime what is the experience that several patients might have through their individual journeys in mental health facilities.

The developments of psychiatry, gradually shifted powers from judges to doctors (Mental Health Act, 1959) and the foundation of the psychiatric hospitals (Vavyli, 2003) and correspond to the medical model of mental health provision. Yet, both professions are still involved in the decision-making related to mentally ill people, depending on context and dangerousness, i.e., a key term of psychiatry defined as the condition where a person is more likely to cause harm or self-harm (Chiswick and Cope, 1995). In fact, this balance between the medical and jurisdictional power reflects a fundamental reason for the existence mental health facilities. Even in our times, society does not accept the responsibility to deal with the dangerousness associated with mental illness and shifts this responsibility inside the protected environments of psychiatric premises to manage or contain that risk. For example in England the patients who are detained in psychiatric facilities under a section of the 1983 Mental Health Act as amended in 2007 , form approximately one half of the psychiatric patient population (Community and Mental Health Team NHS Digital, 2016). These, depending on the severity and the threat to oneself or to others could either belong to custodial services, or hospitals or in facilities in the community such as Community Mental Health Centres. A patient, could sometimes move between the three, depending on the individual course of illness, healthcare system or service availability. Yet, in all three contexts quality of life might be compromised and some institutional practices still prevail, several years after De-institutionalisation.

On his work on neurodegenerative diseases Zeisel (2010) stresses that the inadequacy of the pharmaceuticals and the medical aspects of care could be partially overcome by focusing on areas that we have already some results and specifically human resources and design of the premises. This could also be the case for mental health since medicine has not yet addressed key issues to allow patients have a fully functional life. In fact mental health conditions are among the diseases demonstrating some of the lowest diagnostic and interventional accuracies (Christensen et al., 2009) accentuates the need to develop non-pharmacological ways and more precisely through social and physical contexts, to alleviate patients' burden and increase their quality of life, in the meantime. These are meant to act complementary to medical interventions, reducing the effects of the symptomatology for patients and staff and do not claim being a cure. Evidence base healthcare design has also been considered as a cost-effective means of improving care (Hastings centre report). This need of architecture to support the mental health provision has been frequently reported in medical journals and publications either from doctors and healthcare staff as a need for evidence base design informed healthcare facilities (Foley and Lacy, 1967; Cammock, 1972; Smith, 1973) or from mixed medical and healthcare architecture teams (From and Lundin, 2010; Chrysikou et al., 2016) as well as policymakers (Iowa State University, 1993; Stange, 2012). Most, the importance of architecture for psychiatrists is demonstrated by the fact that bricks and mortar have been regarded as one

of the four essential components of psychiatric de-institutionalisation (Chow and Priebe, 2013) and according to World Health Organisation (WHO) investment on facilities is crucial for mental health provision (WHO, 2015).

Mental disorders account on 31% of years in life spent with disability per person and significant increase of mental illness is expected –depression alone to become the second burden among diseases globally, first in developed countries (WHO and WONCA, 2008). Taking to account the importance of the research of the psychiatric environment as a means to support mental health and the gravity of the social context to mental illness, Hillier and Hanson's theory (1984) on the interrelation of space and social structures, makes the research of the physical environment of psychiatric space crucial for the understanding of mental health care itself. That happens because, in psychiatric spaces usual social norms are modified, either due to regimes or to undercurrents of institutionalization. Thus, understanding of socio-spatial relations might provide understanding of the actual mental health practices and regimes. To achieve this, the objectives are:

a) comprehend the background of psychiatric care

b) explore the main concepts for designing for mental health as they have influenced the psychiatric premises

c) understand the existing state of the art in mental health facilities design and

d) try to identify ways where space syntax could provide new insights.

1.1 MENTAL HEALTH CARE IN THE 20TH CENTURY: FROM INSTITUTIONS TO CARE IN THE COMMUNITY

Soon after the end of WWI in Europe we witness the first seeds of community care, especially in USSR (Madianos, 1980). Yet it was the second WW2 where there is a breakthrough with the development of the first tranquilisers that generated a new confidence on psychiatry and created hope for a potential cure for mental illness (Baldwin, 1993). This, resulted in the shift of the locus of treatment and care from the psychiatric hospital, which used to be a remote, large-scale institution surrounded by leafy grounds to the psychiatric ward of the general hospital, following the floor plan of the rest of the wards and situated usually at the top floor (Cavadino, 1989; Vavyli, 1992). This contributed to an unprecedented medicalisation of care and it was the first attempt against the stigma associated with the illness, as it was included among the less stigmatized conditions that are normally associated with the general hospital. Location-wise too, the general hospital tended to have a much better integration in the urban grid compared to the segregated psychiatric hospital. However, the mentally ill were confined on the top floor, with the ward corridor the only available space to move and they lacked access to open air. Soon became clear that the functional approach of the hospital tower, influenced by the circulation of medical gases and fluids among others, was not the optimum environment for the treatment of mental illness (MARU, 1991). The disillusionment regarding the effectiveness of pharmacological interventions, as there was a revolving door syndrome and patients needed frequent and lengthy re-admissions and the influence of the antipsychiatry movement led to the John F Kennedy legislation on an extensive de-

institutionalisation and constituted the Community Mental Health Centre as the main provision for psychiatric care (Turner-Crowson, 1993). This was known as De-institutionalisation, Community Care, Care in the Community or in some contexts as Psychiatric Revolution and corresponds to a psychosocial model of care where multidisciplinary teams including psychologists, social workers, art therapists etc were involved in the care programmes. It was implemented in a different mode across the western world, presented a considerable degree of experimentation and local variation influenced by principles such as sectorisation, i.e. a decentralized approach of mental healthcare provision, and introduced new types of disciplines such as psychology and occupational therapy, arts and social work in the care of mentally ill patients (Vignet, 1999). Unevenly developed, broad networks of services, most of them experimental and presenting significant local variations, catered for the various needs of mentally ill people (Chrysikou, 2014).

1.2 MENTAL HEALTHCARE ARCHITECTURE

Facilities for mental health followed a similar pattern of experimentation and variety. However, as buildings tend to present a greater inertia to adaptations compared to services, and mental health buildings proved no exception. As a norm, mental health facilities did not reflect the revolutionary semiotics that accompanied care in the community. Although there was literature on the care aspects of the service provision, there was a dearth of Evidence base references to Facilities and Estates suggestions. There could be named several reasons for that:

•   The lack of evidence based culture in architecture

•   The limited exchange of knowledge between architecture and psychiatry, despite the fact that psychiatry considered buildings as an essential part of de-institutionalisation as explained earlier in the paper.

•   The fact that in several contexts, psychiatric revolution meant that the mentally ill people would return in ordinary housing in the community, thus presenting limited interest for medical architecture, the discipline related to healthcare facilities planning and design.

•   The complexity and plethora of the available options, such as day centres or night centres, crisis centres, day or night hospitals, half way homes, rehabilitation hostels, serviced apartments, protected apartments, foster homes, psychiatric wards, community centres, community cafes, occupational rehabilitation services, in terms of service provision, which made their research and the extraction of evidence even more challenging.

•   Lack of knowledge of how psychiatric space operates. There was some knowledge from environmental psychology and psychiatric literature on institutional behaviors in asylums but this research was conducted mostly in the large psychiatric hospitals, which stop operating in most countries and the model of care has changed considerably since. Guidelines on psychiatric facilities by the WHO (Baker et al., 1960), were very far from evidence based models and were mostly reflecting psychiatric theories on how patients' behavior might be influenced by space. What is interesting though about these publications is that they indicated a clear interest on buildings which would support the

therapeutic regime by the medical community, yet this need did not reach the architectural community.

For the NH in the UK, but also in other European countries such as the Netherlands, healthcare architecture kept a systemic role in the planning of the services as the provision for in-house, DoH based, hospital R&D architectural teams suggested and which continued to work closely with the NHS (HANSARD 1803-2005, 1982) even after it was renamed as Medical Architecture Research Unit (MARU) and relocated in the Polytechnic of North London. Yet, other areas of healthcare provision and planning received higher priority.

Mental health architecture, since the mid of the past century presented some very innovative concepts, mainly through the field of environmental psychology. Those involved small scale interventions, such as furniture arrangements or interior design modifications (Amiel, 1976; Ittelson et al., 1970; Sloan Devlin, 1992; Gutkowski et al., 1992) concluding that improvements in the environment of mental health facilities could have a therapeutic effect for patients. That was a very important finding considering the neglect that psychiatric facilities tended to present, but apart from this message that design maters, there was not an integrated theory on how to achieve that. Later, control, privacy and social interaction were identified by Halpern (1995) as elements that could influence mental health through the built environment in general but not specifically in health or mental health facilities.

A multi-disciplinary conceptual collaboration by Baker, Davies and Sivadon for WHO (1960) introduced a theoretical, stemming from psychiatric doctrines, integrated approach to design, with suggestions covering from the location, the scale and the layout of the psychiatric hospital to furniture details. Yet, the timing, just before hospitals started to close, did not allow that model to evolve and suggest a model for the design of community care buildings. The massive closure of psychiatric hospitals, generated unpresented, unmet needs for the accommodation of the newly discharged patients that resulted in several heavily institutionalized people to experience homelessness. Subsequently, the need to house the old and new patients fast in the community occurred and there was no time to propose and research fit for purpose models.

The experimentation, variety and lack of a central theory of psychiatry or medical architecture on mental health facilities, generated a corresponding experimentation on the design of the community mental health facilities. This resulted occasionally in facilities hosting very severe incidents of anti-social behaviors that their buildings were deemed unsuitable and that had to be demolished shortly after opening (Elderfield, 2002; Chrysikou, 2015).

1.3 NORMALISATION, ITS CRITICISM AND THE SCP MODEL

Normalisation theory, which was developed for the neighbouring field of learning disabilities (Wolfensberger and Glenn, 1973) was introduced to the architecture for learning disabilities and from then to architecture for mental health architecture to cover the gap. It was a theory that was already in line with the UK policy regarding the closure of the asylums in the 60's (Wainright, 1999). Initially it appeared as a match, introducing the concept of normal, as opposed to institutional, approaches of treating and

accommodating patients. This sounded appealing after the closure of the psychiatric hospitals, as it opposed to stigma and promoted inclusion. Regarding the built environment, this attempt to eliminate stigma was achieved through a symbolic use of architecture via the polarity between normal vs institutional aesthetics (Robinson and Thompson, 1999). Nevertheless, the efficacy of these theoretical models, or the design guidelines and literature suggestions that derived from it had not been tested through evidence based research. Additionally, there were significant differences between the symptomatology of learning disabilities and psychotic related illnesses, even though belong under the broader mental health umbrella. The main criticism of normalisation came from the practice of medical architecture, with Cullinam (Rush, 1982) and Davies (1988) suggesting that normalisation was disguising medical power and promoted an attitude of invisibility for mental illness and in fact was a reverse use of aesthetics than that of normalisation: instead of helping people to fit in, celebrated diversity and promoted pride through the environment. Both theories however, used physical form to influence the perception of the users of architecture.

Findings from environmental psychology related to healthcare design as well as policy change from more functionalistic models such as nucleus hospitals to patient focused care (Francis et al., 1999) and the influence of the USA consumer oriented healthcare and the Plane Tree hospital ethos, services and aesthetics (Malkin 2002, Frampton et al., 2008) started to affect the whole medical architecture sector. This change was further fuelled by the work in therapeutic landscapes mainly in Scandinavia (Lygum et al., 2012; Jiang and Verderber, 2015) and the USA as well as the introduction of the theory of Salutogenesis from medical sociology (Antonofsky, 1979; 1987) to medical architecture, that became known as salutogenic design (Dilani, 2008).

At the same time in Europe, psychiatric rehabilitation was implemented following various approaches, each differentiated by the place of the hospital in the system: from catering for the most acute spectrum of the disease in hospital settings, such as the case of Belgium who still kept the concept of psychiatric hospital campus and further developed specialised units inside or outside the premises (Fouqault, 1964) or France that retained the hospital but developed sectorised networks of community based associations (Vignet, 1999) that case to being replaced by Care in the Community as in the case of the UK (Griffiths,1988) or hybrids of the two approaches such as the case of Greece that developed community facilities either as satellites of the Psychiatric ward of the general hospital and former asylums, sometimes even in the premises of those, or as part of community based independent associations (Council of the European Union, 1984; Saradides,1995).

In the beginning of the new Millennium, a research was conducted at the Graduate School of the Bartlett, a synchronous and comparative study of the mental health facilities in the UK and France (Chrysikou, 2008). The research was informed of all these theories, i.e, environmental psychology, Care in the Community and Salutogenics as well as normalisation and its criticism (Chrysikou, 2014). After an initial sample of 200 mental health facilities that where visited, 10 --five wards in Community Mental Health Centres in the UK and five Foyer de Post Cure in France-- were selected for a detailed, user-inclusive study. It gathered the key themes and suggestions that appeared in medical, healthcare planning and medical architecture literature and juxtaposed them with patient and staff views on the subject. Methodology was based on medical sociology and comprised analysis of the plans according to use, a detailed architectural checklist of 212 points on the

institutional elements of the buildings, based on a checklist for accommodation for learning disabilities (Robinson et al., 1984) evaluation of the physical environment according to salutogenic criteria and detailed patient and staff semi-structured interviews.

Data were classified according to three tiers of needs, from the basic (survival related) to those related to wellbeing. More analytically, physical needs related mostly to safety and security, i.e. the need to remain alive when there is dangerousness involved. Then patients' competence to being able to take care of oneself, an ability that is compromised by mental illness is mostly related with the nurturing and care provided by staff. Finally, the restoration of the ability to act as an individual, i.e. personalization and choice, as opposed to the imposed uniformity of the institutions, can be achieved when the previous two have been met and is associated with the wellbeing. Moreover, the model corresponded to the three axes associated with mental health as it has been formatted over the centuries by the three main frameworks: the jurisdictional/custodial (safety and security), which has been historically the longer influence, the medical (competence) and the psychosocial, the most recent that developed after psychiatric revolution (personalization and choice).

For example, forensic facilities present much stronger custodial elements, as opposed to assessment wards that have a stronger medical element or vocational rehabilitation services which are closer to the psychosocial. Nevertheless, all elements co-exist in all mental health systems and facilities, following different combinations of the three elements across each system. Thus, each facility can occupy a single point in a three-dimensional space described by the three axes. The model was named the SCP model, from the acronyms of the three parameters (Safety & Security, Competence and Personalisation & Choice) (Figure 1).
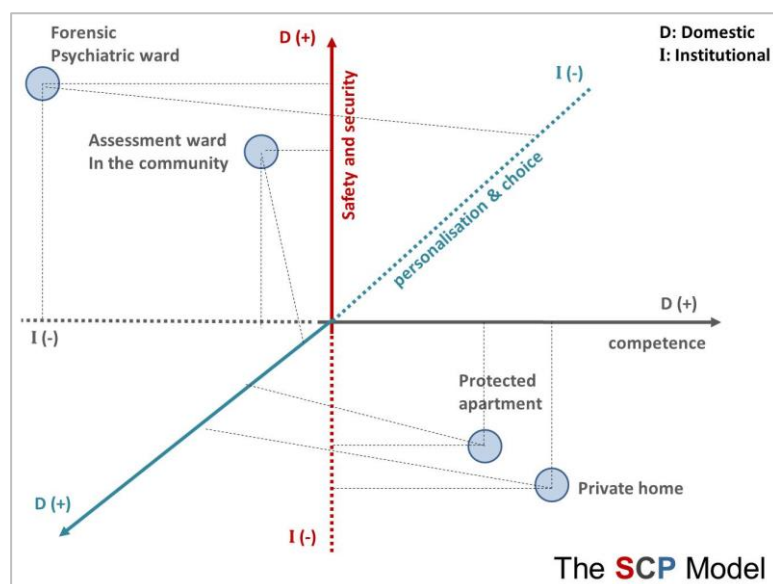

Figure 1: Different types of accommodation, such as the forensic ward, the assessment ward, the protected apartment and private residence according to the SCP model. With the help of the model we can locate each facility in the 3D space that is formed by the three parameters of the model, each parameter serving as an axis. This place is ideally determined by the pathology and stage of the illness: for example, patients living in the protected apartments have much lower needs for an anti-ligature environment than the forensic patients and their competence is very close to independent living and they have much more freedom to personalise their environments and make choices.

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The study produced a significant number of findings covering a broad area of service and building provision, with key finding the inadequacy of the normalization theory to cover the complex needs of mentally ill people, compromising all aspects of care. It is beyond the scope of this paper to go into detail regarding the findings. However, one very interesting finding resulted from comparing the buildings per their institutional features, and juxtaposing them with the inhabitant satisfaction from the ward or foyer premises.

There was a relationship between the number of institutional traits of the buildings and the replies of patients and staff, not necessarily related to the qualitative aspects that the architectural auditing provided. Awarded buildings included in the sample performed middle to low, corresponding to the Checklist score. These were relatively new, purpose built wards in Mental Health Centres, all built with the best of intentions, and awarded accordingly. Especially one of the two, even though had received all these architectural attention as an exemplar (Health Building Note 35, 1997) and was well maintained, performed comparably low to another unit presenting strong institutional characteristics including neglect and anti-social behaviours such as violence and prostitution, both traits that characterized asylums, what we could call a hybrid of an institution in the community. A first, explanation when compared to facilities that scored the lowest in terms of institutional characteristics and additionally presented a high degree of staff and patient satisfaction, was that the later had a significant user involvement, in the form of staff and patient input, from the very early stages of their planning and design. However, this could be the reason for the performance of the latter but not an adequate explanation of the performance of the former (the awarded).

One question generated from this finding related to the morphological characteristics of spatial configurations and if those might be able to provide any hints for that unexpected outcome, i.e., the difference between architectural good intentions and patient as well as staff satisfaction.

A second, smaller scale but higher complexity in terms of methodological approach, was conducted between 2015-2017 involving assessment mental health wards in London. These are still in the framework of Care in the Community, as the UK has closed its Psychiatric hospitals but very close to the acute spectrum of the disease, as patients are at the closest stage of an acute episode, when they need higher medical care as opposed to rehabilitation support and most patients are under significant restrictions of movement and under a section of the Mental Health Act, which is clear custodial element. Yet, this being under the umbrella of Care in the Community, psychosocial rehabilitation is embedded in all stages of the program.

2. METHODOLOGY

The research, which is continuation of the earlier research using the SCP model, uses all the methodological tools of the previous study and at the same time introduces the element of socio-spatial interaction. It bears methodological similarities to an earlier study on care homes for older people combining qualitative psychosocial data and spatial analysis, which found that the spatial analysis could provide insights on issues related to quality of life (Hanson and Zako, 2005). Here, the tools used for the evaluation of the wards with the SCP model, involved the relation of the physical environment to the therapeutic regime and to salutogenic elements, the physiology and the perception of the patients, it was a method to understand the fit for purpose of a facility in accordance to the

therapeutic model and to patient-focused care. In short, it was a social medicine methodology applied in the field of medical architecture.

The research that Hanson and Zako were involved was the closest to the research conducted by space syntax in the broader sector of healthcare facilities to the current research, as it was interdisciplinary and used two main research teams, one of which worked on a quality of life matrix and the other introduced the spatial morphology methods. It should be mentioned here that there is a growing body literature on space syntax and building layouts in relation to nurse work stations, such as the work of Koch and Steen (2012), Sailer et al (2013) yet these are more related to staff interactions and information exchange, which differ from the salutogenic- (patient focused) framework of this research. The key structural difference stems from the fact that the physiology and the perception of the person is altered by a disease and this can affect preferences or actions in relation the physical environment (Vlček, 2011; Nanda,2012; Granovskaya et al., 2013;).

For instance, in space syntax literature interactions are not necessarily related to the pathology nor are subject to interpretation as normative vs institutional induced behaviour (as in the case of standing and wandering (institutional behaviour) for example, in Hou & Marquardt 2016 which has received equal gravity to socialising (behaviour indicating improved mental health). Additionally there is a strong distinction between the culture, the policies and the principles between health hospitals and mental health facilities that is even so strong that in most countries they do not co-exist in the same Trusts (as in the case of the NHS that the health trusts are completely disconnected from the Mental Health Trusts), as well as the decreasing dependency of the mental health facilities from the medical profession and roles especially since the psychosocial model of mental health became the dominant model and we have examples of mental health provision that are so self-governed that the patients hire the staff including doctors (Farrell and Deeds, 1997). This has been an additional reason that we could not draw analogies from research on hospital environments, although the researcher is aware of it, including research in hospital settings conducted using space syntax methodology, as opposed to mental health architecture.

Data derived from building plans, the architectural, walk-through checklist of 212 points and qualitative data on the quality of life of patients and staff from the two semi-structured interviews, one for patients and one from staff, each involving a set of 30 topics. Qualitative methods aim to uncover relationship between the buildings and their features to the quality of life of patients and staff. Then spatial analysis of the wards involves their morphological characteristics of spatial configurations. The research aimed to involve the least possible disruption to the life of the wards, so observations of patients was not advisable for their pathology, especially since at the assessment stage their mental state is very fragile and was avoided. Yet, as the researcher spent time in the ward for the rest of the data collection, there was a relatively good understanding of the actual use of space. Ethical approvals were sought and permissions were granted.

3. DISCUSSION

None of the wards was stand alone and both belonged in a larger mental health complex. Both were in London, Finsbury ward was in St Ann's hospital, Barnet, Enfield and Haringey Mental Health NHS Trust. Initially it was built as fever hospital, yet for four decades it

accommodates mentally ill patients. The campus reminds more of an asylum rather than a community mental health facility, as it is the size of several blocks and a tall brick wall separates the campus from the rest of the community. Yet, the campus entrance is not locked, contrary to the ward entrance. It is a place that with clear signs of wear and tear but there is the minimum possible maintenance on the basis that there is a plan to be replaced soon. Yet, this was also the case when the researcher first visited the ward in 2000, when there were already architectural plans of the "new" building. However, nothing has materialised since and patients are admitted in the ward. The ward is around two almost in-line double loaded corridors that are connected to each other through a common open area at the middle where the pool-table is (Figure 2, figure 3). There is also the nursing station, with direct view to the garden, the lounge and parts of the corridor (figure 4).

The ward presents several institutional elements, it is male only, with very limited privacy having a mixture of dormitories and single bedrooms, and all toilet and shower facilities are common. There is a secure garden, where patients are allowed on their own and where smoking is still permitted, yet there is not internal dining room so they have access to a dining room outside the ward at meal times only. The same room is shared by the female ward too but this happens at different ours and genders do not mix. Staff areas are scattered around the ward, with staff toilets near the entrance, nursing station at the middle, and a series of offices at the other end of the ward, in a part inaccessible to patients. Patients tend to stay in the dormitories (Figure 5), several engaged in passive behaviours in their beds which is a strong institutional trait, which opposed to the psychosocial model of care, some roaming around the corridor close to the nursing office, which is also considered as institutional behaviour, and the pool table, a bit less at the lounge which is arranged in a socio-fugal way and several are at the garden, chatting or smoking. The garden is the area where most social interaction occurs. There are very limited opportunities for therapeutic activities available in the ward and most staff are either in the staff area, so invisible and inaccessible to ward patients, or in the nursing station. The nursing station is occupied with at least two staff members most of the time, yet the furniture arrangement is such that staff is looking at the garden only. In general it was a building that could belong to the former models of care as a hybrid between the jurisdictional model –dormitories, shared toilet facilities, lack of therapeutic areas, socio-fugal furniture etc, with very few elements referring to the psychosocial model of care.

Figure 2: Floor plan of Finsbury ward

Figure 3: Corridor of the ward. At the end of the corridor there is an open common space where the pool table is
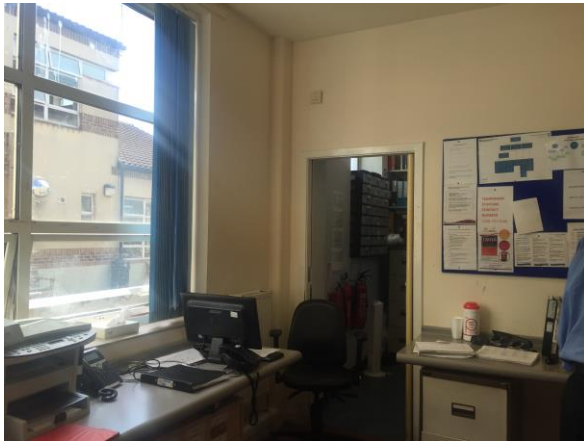
Figure 4: The nursing station   Figure **5: The dormitories**

The second ward is Sapphire ward, at Highgate Mental Health Centre and is part of Camden and Islington NHS Foundation Trust. It is a building that was purpose built as a mental health facility, with several wards on the same floor and on the floors above. Sapphire (figure 6) is at the rear of the building, quite a long walk from the entrance and separated by a sequence of doors. It is on the ground floor viewing green spaces, yet with access only to a secure internal, fully enclosed courtyard. Contrary to Finsbury, smoking is not allowed in the premises and staff had to escort patients outside the premises for cigarettes. This created a lot of tension in the ward, which had been burned by a patient hiding a lighter earlier that year. The researcher visited the ward shortly after the

Figure 6: Floor plan of the Sapphire ward

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renovation, as it remained closed for couple of months after the fire, and the condition was good. It presented more anti-ligature features than Finsbury and perceived sources of danger including the sheltered areas in the courtyard had been removed after a prior incident. The ward comprised three doubled loaded corridors (figure 7), meeting at the nursing station (figure 8). Office areas located at the entrance, occupied one of the tree corridors, one was the female only zone, including bedrooms and a female lounge and the rest were the male area, accessible to all genders (common areas and corridor). All rooms were single with en-suite facilities. The ward presented very strong anti-ligature features (jurisdictional model)but also had strong references to the rest of the models with medical offices being present in the ward plus the privacy of own bedrooms and en suite facilities together with the presence of female only area (psychosocial model) .
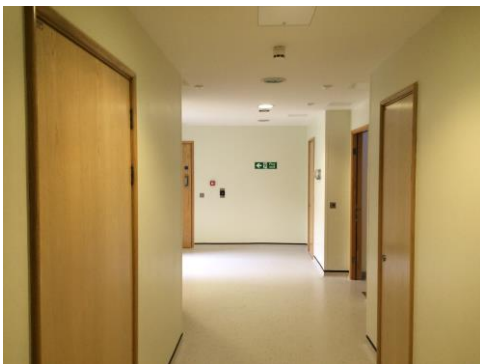

Figure 7: Corridor of the Sapphire ward   Figure 8: The nursing station

Regarding their layouts, the wards presented similarities. They were both single-storey, ground floor with access to a fully protected courtyard. In terms of the position of the nursing station and the common areas, the double loaded corridors, the existence of a secure courtyard, the central placement of the clinic which is the room where medication is administered each morning. Yet, offices at Finsbury where at the deepest end from the entrance and the opposite was happening for Sapphire. Sapphire appeared to be self-contained, with minimal need for patients to leave the ward provision-wise, contrary to Finsbury, which depended in parts outside the ward for areas that patients needed access regularly, such as the dining room or the family guest room, for patients they received visits from family, as children were not allowed in the ward. Yet, the policy, and in particular the smoking policy, had a key impact on the autonomy, the resources and the quality of life of the ward. One staff member had to leave the campus premises to escort one patient for a cigarette break and return after approximately 20 minutes to escort another patient. That was a frequent source of unrest in the ward, as there was not enough staff to escort patients, end patients waiting for staff availability could create an escalated tension outside the nursing station. This was a controversial policy for most of staff and patients, who would see the consequences of both the unrest, the fact that one member of staff had to leave the ward and the congestion it created outside the nursing station for sectioned patients waiting to receive escorted leave. Both staff and patients in the interviews disagreed with this policy. For both groups this was one of the most serious disruptors in the ward and one of the key sources of ward tension. It was even described by the ward manager as the reason behind the fire: that patients were tempted to hide

lighters. The policy was imposed by the Trust on the principle that this is a healthcare facility and smoking should not be permitted, even in the courtyards. This policy was not in action at Finsbury ward, so the queuing and the unrest was avoided as patients had full, unescorted access of the courtyard for that purpose. Having said that, queuing outside the nursing station is considered as an institutional situation, very frequently observed in asylums and even considered together with lying in bed as a key indicator of institutional behaviour. The smoking queue bears references to the institutional practice of the past that was known as cigarette distribution (Chrysikou, 2014; Hirshbein, 2015), where staff would distribute one cigarette at a time at patients, in regular intervals and times through the day, starting from a specific time and ending up at curfew. The practice would create one more reason for queuing outside staff office for patients asking for cigarettes. To see the full implication of this act of having to ask for a lighter and ask, beg or threaten, cause unrest or team up with other patients for added pressure, as all these were demonstrated as escalating behaviours when staff were not available, on patients' self-esteem, a citation from Goffman on what would constitute a description of asylum incident back at the time of total institutions:

.."cannot realize the humiliation to anyone able bodied yet lacking authority to do the simplest offices for herself of having to beg repeatedly for even such small necessities as clean linen or a light for her cigarette from nurses who constantly brush her aside with, "I'll give it to you in a minute, dear", and go off leaving her." Goffman (1961),p 41.

Looking at the semiology of this act to the culture of mental facilities this socio-spatial act outside the nursing station is very important point, indicating:

- One less institutional facility in terms of building features might present a strong institutional behavior because of policy/regime.
- Social unrest can be created by policies even if buildings have provided solutions: in this case, an enclosed courtyard.
- Policy/regime and buildings in mental health provision are interrelated. Yet, policies might change at any time during the building life-circle.
- Policy/regime might affect the spatial use of metal health facilities considerably. For example, in Finsbury ward patients spent a lot of time in bed, especially in dormitories, a very strong institutional passive behaviour. There are mental health facilities where patients must leave their beds and bedrooms lock after breakfast and patients must use common areas or participate in activities. The fact that policy or regime differ considerably even in wards that are geographically close, as in this case, makes policy a strong influence in spatial use. Knowledge and understanding of the institutional regime and policy framework at a broader scale than the case studies might be essential for the understanding of the impact of the ward phenomena and the influence of institutional practices in the wards.

Space Syntax gives a very interesting perspective in the argument. In both wards, the most integrated spaces appear to be the areas outside the nursing station (Figure 9). They are also areas of very good visibility (Figure 10). According to space syntax theory, the most integrated spaces are those that attract most people and social activity (Hillier and Hanson, 1984). In mental health literature ward corridors including the area outside the nursing station have been associated with relatively low expectation of harm and self-harm as a level two out of five (Hunt and Sine, 2009). Research looking at reports in one ward in the US would increase the level of security at these areas from two to four due to increased

risk of violence, falls and elopement (Bayramzadeh, 2016). Yet, in both wards in our research staff felt safe in that area and did not perceived this area as dangerous neither for them nor for patients. This could be related to other findings of this research suggesting an increase in the anti-ligature and the security promoting elements of the current facilities compared to what was happening in the UK 15 years ago which is also a finding of De Almeida and Killaspy (2011).

To that we need to add that the area outside the nursing station, or in many wards that do not have the typical fishbowl nursing station it might be the nursing office --and not the ward manager's office or the administration, or even the psychiatrist's office in the cases that there is a medical office inside the ward—the area where patients tend to gather in total institutions. It is possibly the area where visibility from that point might have been a brief requirement, although in many psychiatric wards especially in those that develop in several floors, which might often be the case, or in clusters not necessarily directly connected to the nursing station as psychiatric wards influenced by normalisation might have a plethora of possible typologies opposite to hospital wards, the nursing station might have visibility only in a very small part of the ward and definitely of one floor only.

Also, the nursing station is not the area where most staff might be at a given time. For example, patients did not tend to gather outside the staff office during ward rounds, where most staff happen to be at Sapphire ward, neither outside the entrance connecting the ward corridor to the ward part where most staff areas lied in Finsbury ward. Patients tended to gather at the most central point. To what extend was that a demonstration of an institutional behaviour, especially in the case of Sapphire ward that the smoking policy bore references to the institutional policy of "cigarette distribution" or a human need of meeting people at the most integrated point of the ward, there can be no certainty. Both are possibilities, as the context of the psychiatric wards where free movement is compromised by a series of policies, which is also the case in these two wards. However, similar findings from other healthcare settings such as correlation between global integration and patients' standing, wandering and socialising in day centres for dementia (Hou and Marquardt, 2016), yet without clarifying if that is a case of layout contribution or part of institutional behaviour.
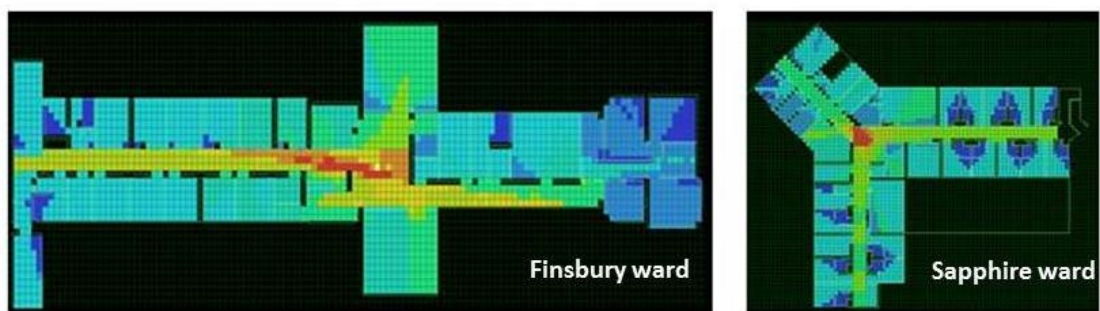

Figure 9: Integration of the Sapphire and Finsbury ward. The most integrated space in both cases is the area outside the nursing station

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Figure 10: Visibility from the nursing station at the Sapphire and Finsbury ward

Regarding the visibility from the nursing station, it is indeed the purpose of a nursing station to have a good control of the circulation areas of the wards. This is what appears in the point Isovists created by using Depthmap software (Turner, 1998). However, the visibility from windows from the nursing station to the corridor has been partially blocked by staff, as they wanted to increase privacy and their chairs face the wall or the courtyard and staff have their backs to the screen of the nursing station. So, they have still the most central position, to run towards an incident yet they do not have in practice a visual control of the corridor or the ward and they did not attempt to by rearranging the furniture for instance or they do not wish to as the action of covering the windows to achieve privacy in the office indicated. Apart from their need to increase privacy, which could be related to the fact that in both wards patients tend to gather outside the nursing station entrance and seek staff attention, either for cigarettes which was the case in Sapphire as otherwise patients were expressing their satisfaction with the attention they were getting from staff or without a specific purpose in Finsbury ward. This need to increase privacy was contradictory to findings regarding ward visibility by Bayramzadeh (2016) but this could be related to the increased violence of that ward at this point and could be related to several reasons, not necessarily spatial.

4. CONCLUSIONS

Mental health facilities present significant variations even at a local level. There can be significant differences in the resources available and facilities can be at the whole spectrum of being obsolete and neglected, to being equipped with the latest technologies in anti-ligature. In both cases, the wards present stronger references to the previous care models, the jurisdictional or custodial and the medical model rather than the current model of the psychosocial rehabilitations. This could be the result of both spatial and organisational reasons.

One of the most common indications of this has been the accumulation of patients outside the nursing station either in form of wandering or in form of expressing dissatisfaction. This was confirmed by the analysis of the spatial morphology of the wards (Table 1). However, in institutional contexts this could be for reasons deriving from the social fabric or the policy of the institution, i.e. typical institutional behaviour or a reaction to a practice that might restrict aspects of movement or personal freedom and generate phenomena related to total institutions and not necessarily part of a socio-spatial interaction. The

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restrictions to the smoking policy or limited staff and patient interaction due to the impermeability of the staff area by patients (locked doors) or lack of therapeutic activity program could be some of the reasons behind that, indicating the complexity of the problem.

Nursing stations in single storey wards tend to be in the most integrated part of the facility and in areas providing good visibility, yet this visibility is not necessarily among staff priorities. This is a very important finding on the revisiting of the centrality of the placement of the nursing station in terms of a briefing priority. A spatial analysis of wards that presented similar integration characteristics in the activity or the social areas, such as the common room or the activity room might increase the potential for social interaction. More research in that area is needed.

Spatial analysis could provide an insight to the use of the spaces in psychiatric facilities that a qualitative, medical architecture methodology might not have picked, and reveal ways that previous models of care prevail in the building stock. That way models closer to the current concept of care, i.e., the psychosocial model, could emerge. In that case space syntax could be used parallel to other tools at the planning stage of healthcare facilities, as other research in healthcare facilities indicated (Peponis et al., 1996). However, the insights from the medical sociology methodology, could provide an alternative understanding to the mechanisms of the institutions, compared to spatial analysis. The combinations of both methodologies could provide help develop more elaborate research tools both for medical architecture and architectural morphology, as research with comparative methodologies involving healthcare facilities are increasing, however, there is still potential, especially for research comparing methodologies (Haq and Luo, 2012).

The most important finding though is that research comparing mental health architecture and space syntax could increase our understanding not only for the psychiatric space but the dynamics of the psychiatric institutions in general. It could also challenge the way psychiatric facilities are designed, from the current observation led model to one closer to the psychiatric rehabilitation, as this might benefit more from psychosocial rehabilitation uses provided at points of higher integration. This does not mean that safety and security might be compromised, as there are several other ways that could provide the required levels of safety and security. This, would have immediate implications to the quality of life of mental health professionals, carers, family members and most of all for mentally ill people.

Syntactic resulted data of the two wards

Ref	Finsbury ward Integration [HH]	Sapphire ward Integration [HH]
1	1,2421194	1,6697848
2	1,1987535	1,6695848
3	1,2421194	1,125999
4	1,2421194	1,125999
5	1,2421194	1,125999
6	1,2421194	1,125999
7	1,2421194	1,1666977
8	1,2421194	0,87239563
9	1,2421194	0,87239563
10 (nursing station)	1,7389672	0,87239563
11	1,1934088	1,125999
12	1,2421194	1,125999
13	1,2421194	1,125999
14 (corridor 2)	1,2421194	2,3618517
15	1,2421194	1,1453121
16	1,2421194	1,0193254
17	1,2421194	1,0193254
18	1,2421194	1,403419
19 (nursing station)	1,3231272	1,2776092
20	0,92217958	0,92224681
21	0,92217958	1,2414861
22	0,92217958	1,9762431
23	1,2949755	1,2741568
24	0,90841568	0,93111455
25	0,90841568	1,2741568
26 (corridor/lobby)	1,9633501	0,93111455
27	1,1066154	1,2741568
28	1,1066154	0,93111455
29	1,4491394	1,2541568
30	0,98167503	0,93111455
31	0,98167503	1,2741568
32	0,98167503	0,93111455
33	0,98167503	1,2741568
34	0,98167503	0,93111455
35	0,98167503	1,2741568
36	1,0868545	0,93111455
37	0,80084014	1,2741568
38	0,80084014	0,93111455
39	0,80084014	1,2741568
40	0,80084014	0,93111455
41	0,80084014	1,2741568
42	0,80084014	0,93111455
43		1,9367183
44		1,2414861
45		1,2414861
46		1,2414861
47		1,2414861
48		1,4453121
49		1,0301692
50		0,79373699
51		1,0193254
52		1,0301692
53		0,79373699
54		1,0301692
55		0,79373699
56		1,0301692
57		0,79373699
58		1,0301692
59		0,79373699
Mean Integration	**1,12790617**	**1,150705265**

Syntactic resulted data of the two wards (from the least to the most integrated space)

Finsbury ward Ref	Integration [HH]	Sapphire ward Ref	Integration [HH]
37	0,80084014	50	0,79373699
38	0,80084014	53	0,79373699
39	0,80084014	55	0,79373699
40	0,80084014	57	0,79373699
41	0,80084014	59	0,79373699
42	0,80084014	8	0,87239563
24	0,90841568	9	0,87239563
25	0,90841568	10	0,87239563
20	0,92217958	20	0,92224681
21	0,92217958	24	0,93111455
22	0,92217958	26	0,93111455
30	0,98167503	28	0,93111455
31	0,98167503	30	0,93111455
32	0,98167503	32	0,93111455
33	0,98167503	34	0,93111455
34	0,98167503	36	0,93111455
35	0,98167503	68	0,93111455
36	1,0868545	40	0,93111455
27	1,1066154	42	0,93111455
28	1,1066154	16	1,0193254
Mean Integration of the ward	**1,12790617**	17	1,0193254
2	1,1987535	51	1,0193254
11	1,1934088	49	1,0301692
1	1,2421194	52	1,0301692
3	1,2421194	54	1,0301692
4	1,2421194	56	1,0301692
5	1,2421194	58	1,0301692
6	1,2421194	3	1,125999
7	1,2421194	4	1,125999
8	1,2421194	5	1,125999
9	1,2421194	6	1,125999
12	1,2421194	11	1,125999
13	1,2421194	12	1,125999
14	1,2421194	13	1,125999
15	1,2421194	15	1,1453121
16	1,2421194	**Mean Integration of the ward**	**1,150366282**
17	1,2421194	7	1,1666977
18	1,2421194	21	1,2414861
23	1,2949755	44	1,2414861
19	1,3231272	45	1,2414861
10 (nursing station)	1,7389672	46	1,2414861
26 (corridor/lobby)	1,9633501	47	1,2414861
		48	1,2414861
		29	1,2541568
		23	1,2741568
		25	1,2741568
		27	1,2741568
		31	1,2741568
		33	1,2741568
		35	1,2741568
		37	1,2741568
		39	1,2741568
		41	1,2741568
		19 (nursing station)	1,2776092
		18	1,403419
		22	1,9762431
		1	1,6697848
		2	1,6697848
		14 (corridor 2)	2,3618517

Table 1: Syntactic resulted data of the two wards: Integration analysis

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