Environments of cancer care

Velindre NHS University Trust

UWE Bristol | University of the West of England

Note:

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1. Introduction

The World Health Organisation, WHO states that 'cancer is a leading cause of death worldwide, accounting for nearly 10 million deaths in 2020, or nearly one in six deaths'[1] and it is likely that many of the population have been affected by or knows someone who has been affected by the impact of a cancer diagnosis. The general hospital, was, and remains, a place of acute medical care that focuses its efforts on diagnostic and restorative care rather than the holistic care someone may require when living with a diagnosis of cancer. An admission or visit to a hospital may feel incredibly daunting and perhaps even summon feelings of fear or anxiety – 'care settings, as currently configured, are notoriously disorienting, anxiety-inducing, and in some ways dangerous for physical, psychological, and existential health'.[2] The stereotypical architectural environment of wipe clean surfaces and fluorescent lighting projects a sense of the institutional that anonymises patients or visitor's condition and/or sense of self as another number on a ward or corridor amongst many other medical conditions. The creation of specialist cancer diagnostic and treatment centres are intended to provide the dedicated and focus care that those suffering from cancer need, and though may share many similar functions of an acute hospital, aspire to counteract negative experiences of on-going care as may be needed by those affected by cancer. As custodians of the built environment, architecture and design professionals have an ethical responsibility to ensure that the places and spaces that are designed for the care of those that are ill are not only respectful of the situations of the occupiers - whether staff, patients, or visitors -but also can express delight and create positive impact on well-being and health outcomes.

Commissioned by the Velindre University NHS Trust in support of the design of their new visionary cancer centre; this review will focus on how meaningful approaches to architectural place-making can contribute to the creation of quality places and spaces of cancer care. As such the paper will be divided into two parts. The first will seek to provide a historical and social contextualisation to the theme of caring environments, briefly

1 WHO, Cancer (2022) <https://www.who.int/news-room/fact-sheets/detail/cancer> [accessed 17th May]
2 Lisa Eckenwiler, 'Displacement and Solidarity: An Ethic of Place-Making', Bioethics, 32.9 (2018), 562-68

exploring the relationship between the built environment and care outcomes and the psycho-social experience of care. The second part will introduce the notion of people-centred place-making and provide discussion around three strategic components, signposting to key precedents and literature.

Velindre – a landmark development

At a higher organisational level, the global COVID-19 pandemic has acutely affected cancer care provisions. Richard et al state how 'delayed diagnosis and the provision of suboptimal care may have a larger impact for the wider population of patients with cancer'[3] with the NHS warning the UK government that 'improving cancer care will be a huge challenge'[4] post-pandemic. As the pandemic forced reassessments toward the relationship of design and health, there has been renewed interest in healthcare building typologies from built environment professionals, with one UK-based architect contemplating that it was:

> almost inconceivable' that hospitals, clinics or GPs' surgeries would remain unchanged by the pandemic… when there is a chance to take a breath, there will be a major rethink of hospital design.[5]

Though the architectural design of individual healthcare buildings cannot solve deeply ingrained and complex issues regarding provision of cancer care – Maggie Keswick Jencks, an iconic figure in the development of architecture and cancer care, asks 'why shouldn't the patient look forward to a day at the hospital?'[6] - new buildings have the potential to contribute to rebalancing positive experiences of cancer care that encourage interaction and delight.

Velindre University NHS Trust in March 2021 received permission for the intention of a new cancer centre to be built in Cardiff by 2025. Located in the suburb of Whitchurch,

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3 Mike Richards and others, 'The Impact of the Covid-19 Pandemic on Cancer Care', Nature Cancer, 1.6 (2020), 565-67, p.567

4 BBC News, Improving Cancer Care a Huge Challenge Post-Pandemic (BBC News, 2022) <https://www.bbc.co.uk/news/health-60249904> [accessed 16th June]

5 Richard Waite and Greg Pitcher, 'How Will Covid-19 Change the Design of Health Facilities?', Architect's Journal (2020), <https://www.architectsjournal.co.uk/news/how-will-covid-19-change-the-design-of-health-facilities/10047080.article?blocktitle=coronavirus&contentID=25133> [accessed 1st June 2020]

6 Maggie Keswick Jencks, 'A View from the Front Line', 1995), p.22

Cardiff, adjacent to the now defunct Whitchurch Hospital, the building was opened in 1956. The land around this area has a long history as a broader landscape of care, with the Whitchurch Hospital situated in large grounds that not only housed in-patient accommodation, aspects needed to support self-sufficiency such as generators, but also a farm that acted as both a method of food production and therapeutic space. Like many other healthcare centres, Velindre has seen many extension and renovation projects over the years, most recently with a temporary Maggie's Centre being built in its grounds, further developing its holistic approach to cancer care. Now approaching seventy years old, however, its building stock is outdated and unable to support the standards for best practice in care. The vision aspires to become a new landmark for cancer care, with the design brief stating that the 'design ambition is that the new Cancer Centre should become an exemplar building that will engender a sense of national pride and identity and increase the profile of the Velindre as a leading cancer centre.'[7] Therefore, it is vital that the development offers a positive impact on not only the 'insider' stakeholders of the centre but the 'outsider' stakeholders such as the residents of the surrounding local community as a outward looking development. Central to these aspirations is the capacity of the caring environment and its surrounding landscape and public realm to be the embodiment of the values and principles of the Velindre organisation itself. Many past patients and staff anecdotally refer to the 'Velindre way' and the positive relationships engendered by their experiences, further described in the brief 'it is these relationships which make the care and support Velindre offers so special. Our perception of cancer and cancer treatment is more positive than it was. The new building should reflect this positivity.'[8] The aspirations set out by Velindre are unified around the consideration of people at all scales within the built environment, critically aligning with the principles of place-making as a people-centred approach to design.

7 Velindre University NHS Trust, 'Design Brief: A Velindre Cancer Centre for Future Generations', n.d)
8 Ibid., p.10

2. Architecture and care

A brief history of caring environments

Environments of care have been in existence for millennia - albeit primitive in comparison to our contemporary understanding of health and well-being – in ancient Mesopotamia, India, China, and Southeast Asia. Some of the first recorded physical buildings were the asklepion's of Ancient Greece; temples and large-scale complexes of standardised buildings that were clustered around coastal locations offering holistic and broad landscapes of care. It is noted that even at this time there was an awareness of environmental concern, as Risse noted that the Ancient Greek masterplans provided 'carefully controlled spaces conducive to healing'[9] maximising opportunities for natural ventilation and sunlight.

Moving forward through western history, the provision of care-like environments was often linked with religion, with spiritual care intertwined with physical care of travellers or pilgrims. Architectural historians Thompson and Goldin's term 'derived plans', describe 'plans originally evolved for other purposes and adapted to nursing.'[10] This coincidental application of religious buildings towards care emphasised a holistic combination of physical and mental well-being. The institutional hospital, the origins of what we know today, began to emerge in the UK during the 18th-19th century, when knowledge of infection control was still in its infancy. Florence Nightingale's 'Notes on Hospitals'[11] in 1863, advocated for the reform of healthcare environments to prioritise hygiene, fresh air, sanitation, suitable drainage, light and most notably the consideration of patient experience. Looking then to the 20th century, this in part then contributed to the emergence of sunlight and convalescence. For example, in 1903, Dr. Auguste Rollier opened a 'sunlight clinic' in the Alps said to have influenced the surge of modernist

9 Guenter B. Risse, Mending Bodies, Saving Souls : A History of Hospitals (New York: New York : Oxford University Press, 1999) pg.56
10 John D. Thompson and Grace Goldin, The Hospital : A Social and Architectural History. ed. by Grace Goldin (New Haven, London: New Haven, London, Yale University Press, 1976) pg.5
11 Florence Nightingale, Notes on Hospitals (London: Longman, Green, Longman, Roberts, and Green, 1863)

sanatoriums in Europe, treating tuberculosis and associated ailments, such as Alvar Aalto's renowned Paimio Sanatorium.[12]

1948 saw the birth of the National Health service in the United Kingdom, and with that came a dramatic building programme that developed a large infrastructure of care environments. Martin et al, quoting Monk described that the UK post-war hospital building boom developed an almost standard template of repeated plans that could be 'reproduced with relative ease throughout a site'.[13] The introduction of the NHS changed the experience of healthcare for much of the population, moving away from smaller community led models to large institutional environments that began to erode people's relationship with health and well-being. Reflecting on the early origins, though care in ancient history would be unrecognisable by contemporary comprehension of medicine, we might consider that lost is the sense of a broader landscape of cancer care. One in which care is not applied in isolation, but holistically managed across different scales, functions, and places within an urban environment.

Design in support of care

Though we now consider and know that our experience of architecture and the built environment is inextricably linked to care and well-being, it was the early work of architectural researchers and environmental psychologists in the 1980's that began to rigorously address this hypothesis. Roger Ulrich's 1984 pioneering study of surgery patients in Pennsylvania Hospital, USA - 'View through a Window May Influence Recovery from Surgery'[14] - was a seminal paper that provided data outlining the tangible link between the built environment and positive health outcomes. Ulrich's study revealed that those given a hospital room with an outlook onto trees recovered in faster time and required less pain relief than those assigned a hospital room whose view was a brick wall.

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12 Esther M. Sternberg, Healing Spaces
the Science of Place and Well-BeingHarvard University Press, 2009)

13 Daryl Martin and others, 'Architecture and Health Care: A Place for Sociology', Sociology of health & illness, 37 (2015) p.7

14 Roger Ulrich, 'View through a Window May Influence Recovery from Surgery', Science (New York, N.Y.), 224 (1984), 420-1

This study laid the foundations for evidence-based design. Professor Ulrich defines this as by 'which the design process is guided by an empirical understanding of the effects of health-care physical environments on safety, efficiency, and clinical outcomes. The scientific foundation for evidence-based health-care design is already large and surprisingly strong.'[15] Evidence-based design, as a way of implementing tangible outcomes, has grown into a well-known approach to healthcare design with a plethora of resources available regarding specific themes such environmental design, sensory environments, and sustainability.16 As noted by Eckenwiler, the work of those involved in evidence-based design has:

> detailed a range of effects of institutional design, including the effects of noise and light on recovery times, and the ways architecture can shape interactions and experiences. Long-term care settings are infamous for poor conditions. A lack of light, private space, and access to the outdoors[17]

Emerging in parallel, was the theme of healing architecture, with medical researcher Dr. Esther M. Sternberg's, notable 2009 publication 'Healing Spaces'.[18] This work discussed the sensory environment as a vital component for positive health outcomes and delved further into the link between architecture and neuroscience, exploring the impact of architecture on our physiology. However, the work of Annemans et al posits that, despite the work of these areas of research, 'information from scientific research is usually regarded as difficult to access and integrate in the design. This might be explained by the fact that this information is rarely oriented towards building design.'[19] The realm of architecture and design is grounded in the visual, and this presents potential for undue bias towards aesthetic decisions to be influenced by echo chambers of architectural media and desktop studies undertaken in isolation from the place and people using it. As evidence-based design seeks to learn from quantitative environmental data, there is a growing programme of qualitative studies - 'careful listening to staff, observation of

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15 Roger S. Ulrich, 'Essay: Evidence-Based Health-Care Architecture', The Lancet, 368 (2006), S38-S39

16 Suggested further reading is included at the end.

17 Eckenwiler, 'Displacement and Solidarity: An Ethic of Place-Making', Bioethics, 32.9 (2018), 562-68

18 Sternberg, Healing Spaces
the Science of Place and Well-BeingHarvard University Press, 2009)

19 Valerie Van der Linden and others, 'Architects' Approaches to Healing Environment in Designing a Maggie's Cancer Caring Centre', The Design Journal, 19.3 (2016), 511-33, p.512

hospital life'[20] - to support interpretations of how best practice in design affects the occupants of care environments.

Experiencing care

In understanding environments of care in a qualitative context, it is necessary to discuss the shift of care practices during the 20th-21st century and its impact on the way in which people now experience healthcare. This intersubjective understanding is central to architects' ethical responsibilities towards designing environments fit for purpose, both functionally and psychologically. The late 20th century saw a shift in modern medicine, developing rapidly to the current context of sophisticated diagnoses, treatment, and technology. The influence of neo-liberal theories in the mid 20th century however, propagated a consumerist agenda within global healthcare environments. Professor Annmarie Adams explains how 20th century hospitals often, in response 'blurred the lines between houses, parks, malls, hotels, and spas discreetly "normalizing" illness and medicine'.[21] This typological shift had a demonstrable effect on the psychological experience for not only patients but visitors and staff, encouraging a sub-conscious 'impression that "care" is a commodity product that can be bought.'[22] Echoing Adams analysis, Kearns and Barnett state that 'mall-like environments are signifiers that essentially mystify the processes of care, cure and healing'[23] by dismantling the metaphorical relationship between the person and their care. Reflecting on this in the context of cancer care, this further emphasises that 'cancer patients lived experience is modified by physiological and psychological changes…Thus, a cancer patient's 'changing body' demands an openness to [a] new embodied experience'.[24] This discussion would be remiss to not mention how the global impact of the COVID-19

20 Sarah M. Hosking and Liz Haggard, 'Healing the Hospital Environment: Design, Management and Maintenance of Healthcare Premises', 1999)

21 Annmarie Adams, 'Home and/or Hospital: The Architectures of End-of-Life Care', Change Over Time, 6 (2016), 248-63, p.258

22 Annie Bellamy and others, 'The Dying Patient: Taboo, Controversy and Missing Terms of Reference for Designers—an Architectural Perspective', Medical Humanities (2020), medhum-2020-011969, p.4

23 Robin A. Kearns and J. Ross Barnett, 'Consumerist Ideology and the Symbolic Landscapes of Private Medicine', Health & Place, 3.3 (1997), 171-80, p.180

24 Pleuntje Jellema and others, 'The Roles of Cancer Care Facilities in Users' Well-Being', Building Research & Information, 48.3 (2020), 254-68, p.255

pandemic has furthermore radically transformed both perceptions and experiences of healthcare environments. From the impact on patients and infection control - 'many…were reluctant to go into hospital at the height of the COVID-19 crisis, when visiting restrictions were so tight and there were fears of contracting the virus'.[25] As society navigates a path to recovery from the pandemic, a sense of distance and potential alienation may be said to have contributed to skewed understandings of the realities of how and what it means to be ill and inhabiting an institutional hospital setting.

With the recent shift toward people-centred care, there has, however, been a marked 'paradigm shift in care practice – from focussing on disease to giving more attention to the patient'[26] that begins to address the shortcomings of historic perceptions of caregiving and their associated environments. Following this there has been an influx in both social science and architecture focused research that explores lived experience of cancer care. Research conducted by Jellema et al regarding cancer care facilities, found that they accommodated multiple roles, acting as:

> (a) a built environment that contains and mediates the confrontation with cancer, requiring attention for boundaries, routes and transition spaces; (b) an environment that can support coping through an experience of normality, spatial flexibility, and the opportunity to distance oneself from features typical of a hospital; and (c) an environment that is constantly changing, while receiving people who deal with changing bodies.[27]

Cancer care facilities are complex clinical environments, with pragmatic aspects such as, but not limited to infection control, sufficient storage space, staff efficiency and circulation, handling of waste, and optimum lighting, thermal and aural conditions for the delivery of care. Merely attending to the requirements above, would reinforce Maggie Keswick Jencks' account of hospital environments for those affected by cancer as declaring 'to the patient, in effect: "how you feel is unimportant. You are not of value. Fit in with us, not

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25 Sarah Neville, 'Rise in Uk Deaths at Home During Pandemic Raises Questions About Support and Treatment', The Financial Times, August 31st 2021
26 Jellema and others, 'The Roles of Cancer Care Facilities in Users' Well-Being', Building Research & Information, 48.3 (2020), 254-68
27 Ibid., p259-260

us with you"'.[28] The roles outlined by Jellema et al demonstrates the necessary further mediations that designers of architectural environments of cancer care facilities must be aware of and interweave seamlessly with the practical.

The above discussion has focused on the experience of care from the point of view of someone receiving care, but it is also important to recognise and value experiences of care from the perspective of those providing care. Those who provide care covers a broad scope of roles and responsibilities and we might organise them into two categories. Direct care, given by those in a clinical role such as doctors, nurse, occupational therapists etc. Indirect care might be given by housekeeping, maintenance, or catering staff members etc, but is typified by those whose role supports the broader scope of care for patients, other staff members and even the building itself. The negative experience of caregivers has been widely documented following the COVID-19 pandemic, with the mental well-being of healthcare workers who have been 'generally recognized for their emotional resilience, must now face additional layers of responsibilities and mental and physical hardships'.[29] Staff are vital in the creation of not only positive health outcomes but experiences, and the physical environment is vital to the 'backs and feet of the staff'.[30]

3. Place-making

Origins of place-making

A much used term of reference in the study and practice of architecture, place is simply defined as 'an area, town, building, etc'[31] The architectural concept of place, however, is often intertwined with the term space, and has had many variations posed by different philosophical schools of thought, notably the work of Henri Lefebvre[32] that posits place and space is not only a physical environment but what Professor Adrian Forty describes

28 Keswick Jencks, 'A View from the Front Line', 1995), p.21
29 J. Shreffler and others, 'The Impact of Covid-19 on Healthcare Worker Wellness: A Scoping Review', West J Emerg Med, 21.5 (2020), 1059-66, p.1064
30 Joan Kron, 'Designing a Better Place to Die', 1978
31 Cambridge Dictionary, Place (n.d) <https://dictionary.cambridge.org/dictionary/english/place> [accessed 23rd June]
32 Henri Nicholson-Smith Donald Harvey David Lefebvre, The Production of Space, 1991)

as being where the 'cultural life of societies takes place within' and is at both times a product and type of work.[33] Though place(s) existed and were built for millennia before, the conscious act of place-making first emerged in the work of American activist and journalist Jane Jacobs and publisher William H. Whyte during the early half of the 20th century. Jacob's polemic 'Downtown is For People'[34] and Whyte's 'The Exploding Metropolis'[35] criticized and called out post war mega-scale urban development in American cities that placed vehicle passageway as a priority over human scale movement and experience. As Kent summarises, their work emphasised the negative implications of 'top-down decision making on the quality of life in American communities and articulated the importance of small-scale planning that enhances human interaction'.[36] Further literature focused on the concept of place and place-making included such architectural authors such as Christopher Alexander, Gordon Cullen, and Kevin Lynch. Published in 1960, Lynch's 'The Image of the City'[37] described five key elements - nodes, paths, districts, landmarks, and edges – felt to be vital to the representation and sub-conscious experience of place – linking to the roles of cancer care facilities mentioned earlier on pg. 11. Aravot summarises how early theories of place-making set out an aspiration for 'feelings of safety, security and orientation, and a remedy against feelings of alienation and estrangement'[38] in the places that we occupy and that furthermore this approach is pertinent to design from body to urban scales.

Why place-making

As an approach to the creation of meaningful environments of care and cancer care, we may look to the principles of place-making to provide strategic drivers and aspirations for both the design process and outcome. Though the term appears deceptively simple and grounded in physical interventions, place-making goes far beyond undertaking desktop site studies. It requires commitment and time in the generation of critical and in-depth

33 Adrian Forty, Words and Buildings : A Vocabulary of Modern Architecture (London: Thames & Hudson, 2000), p.272

34 Jane Jacobs, 'Downtown Is for People', Fortune (1958)

35 Randall Smith, The Exploding Metropolis (Garden City, N.Y.: Doubleday, 1958)

36 Ethan Kent, 'Leading Urban Change with People Powered Public Spaces. The History, and New Directions, of the Placemaking Movement', The Journal of Public Space (2019), 127-34, p.128

37 Kevin Lynch, The Image of the City (Cambridge, Mass.: MIT Press, 1960)

38 Iris Aravot, 'Back to Phenomenological Placemaking', Journal of Urban Design, 7.2 (2002), 201-12

understanding of not only a sites location and context, but of the community and key stakeholders with the 'potential to positively shape where and how people will live, work, socialise, move about and engage.'[39] There is no universally agreed framework for what place-making definitively entails as each site and community are unique. The Design Commission for Wales (DCfW) - an expert body established by the Welsh Government in 2002 to promote design excellence in the built environment across Wales - published the Placemaking Guide 2020 40 defined place-making as broadly:

> ensuring that each new development or intervention contributes positively to creating or enhancing environments within which people, communities, businesses, and nature can thrive. It places people at the heart of the process and results in places that are vibrant, have a clear identity and where people can develop a sense of belonging' [41]

As highlighted above, place-making, therefore, at its core relies on and revolves around the engagement of those who will inhabit the place itself with the professionals responsible for its design and delivery.

Contemporary interpretations

A key figure in the advancement of place-making has been the work of Danish architect and urban designer, Jan Gehl, principal at Gehl studio, globally recognised for both his academic and professional work regarding urban places. Drawing on the principles of place-making he describes how good design can positively impact inhabitation, social and poetic experiences of place:

> when outdoor areas are of poor quality, only strictly necessary activities occur. When outdoor areas are of high quality, necessary activities take place approximately the same frequency – though they clearly tend to take a long time, because the physical conditions are better. In addition however, a wide range of optional activities will also because place and situation now invite people to stop, sit, eat, play and so on.[42]

39 Design Commission for Wales, 'Placemaking Guide ', 2020)
40 Ibid.
41 Ibid.
42 Jan Koch Jo Gehl, Life between Buildings : Using Public Space (Washington, DC: Island Press, 2011)

Central to Gehl studio's exploration of place-making has been the way in places activate and encourage human interaction to manifest, by looking for example public furniture, materiality, pedestrian routes, and sensory qualities. As a design response however, this can only be generated with acute awareness of the occupiers not in the isolation of a design office. Since the term place-making has grown in popularity, some academics however have raised concern that it has become a generic umbrella term: as Wortham-Galvin explains 'this ill-defined buzzword most often serves to rally support for redevelopment projects that ignore deep patterns of local culture'[43] and often do not critically engage in place-making, perhaps due to the necessary investment of research focused time that is not afforded in typical commercial developments. Though place-making promotes quality in the built environment, it should not be viewed as a simple design exercise in quality of design, in that its core principles suggest that place-making is actually 'articulated as an evolving language of form and space…centrally an attitude, a process of discovery and invention'.[44]

Considering the bodily impact of place-making, Jos Boys renowned architect and educator, has written about how the concept of 'place' is more than 'individual sensory experience to a wider society, so that particular groupings of buildings and urban spaces are seen as somehow containing deeply shared social meanings, comprehensible through "common sense" to us all'.[45] Boys work unpacks a more contemporary approach to place-making that champions its early origins; one that advocates for sensory-led and poetic environments that are balanced with equitable lived experiences that reject the notion of the 'assumed "everyone"'.[46] As noted in the previous section, a diagnosis of cancer can have profound implications on a person's physiological and psychological health, and despite cancer being a widespread diagnosis, care must be taken by those designing for cancer care to not generalise any preconceptions previously held. If people are a central tenet of place-making, architects and designers must remain steadfast in avoiding the application of stereotypes to the types, needs and spatial requirements of

43 BD Wortham-Galvin, 'Mythologies of Placemaking', Places, 20.1 (2008), p.32
44 Charlotte Imrie Robert Kullman Kim Bates, Care and Design : Bodies, Buildings, Cities, 2017) p.161
45 Ibid. p.159
46 Ibid. p.165

buildings occupiers. Professor Niall McLaughlin of Niall McLaughlin Architects, the designers of an award-winning residential scheme for those with Alzheimer's, notes that 'an architect must strive to imagine what it is to be someone else experiencing a place. This intuition is the cornerstone of an architect's role'.[47] Embracing intersubjectivity and being open is critical for all those involved in the design and implementation of places but must be founded on the knowledge of those who might use and inhabit it.

Key strategies

The DCfW's Placemaking Guide 2020 outlines three key elements that should be addressed equally in pursuit of best practice in place-making: activity, physical form and meaning. In synthesising these three components with the ten principles of Velindre's design brief, this paper proposes three themes - co-production, architectural atmospheres, and integrated landscapes – to focus on as potential strategies that contribute to contemporary quality spaces and places of cancer care.

Co-production

Velindre's design brief explains that the design should 'consider the needs of the staff, visitors and the families who will use the hospital and facilitate interaction between them at all levels'.[48] Explicitly highlighted further on, is the affirmation that 'we want people to be able to say that their views count and do make a difference'.[49] This assurance aligns with a core principle of not only place-making, but the Well-being of Future Generations Act[50] which outlines involvement and collaboration as two of the five ways of working. Without proper management and care however, it has been noted that the expert appropriation of placemaking by design professionals may 'den[y] the potential for people to take control over events and circumstances that take place in their lives'.51 It is defined by Realpe and Wallace as:

47 Niall McLaughlin Architects, 'Alzheimer's Respite Centre', Bartlett Design Research Folios (2016) p.15
48 Trust, 'Design Brief: A Velindre Cancer Centre for Future Generations', n.d), p.8
49 Ibid., p.11
50 Welsh Government, 'Well-Being of Future Generations (Wales) Act 2015', 2015)
51 Lynda H. Schneekloth and Robert G. Shibley, 'Implacing Architecture into the Practice of Placemaking', Journal of Architectural Education, 53.3 (2000), 130-40

> collaboration between a professional or technical provider and a service user…[and] requires users to be experts in their own circumstances and capable of making decisions, while professionals must move from being fixers to facilitators[52]

Co-production - sometimes referred to as co-design - is a method that can provide quality assurance, aid in the deconstruction of stereotypes and foster a sense of ownership and connection by stakeholders. Co-production might be approached in different ways, but its essence is the facilitation of open and honest discussions that generate new knowledge from the synthesis of expertise from two (or more) groups that would not have been possible to create individually. The facilitation of this by architects, builds upon the work of Boys mentioned earlier, and is a principle of the ethics of their professional role, in maintaining their responsibility to the stakeholders and not prioritising aesthetic form-finding. In the design of cancer care facilities and the aspirations of Velindre, we might observe that co-production could be applied at two varying scales, the macro, being the relationship with the wider community of Whitchurch, and the micro, that of the occupiers of the facility itself.

At the broader urban scale, community engagement is a well-known tool in planning and development, especially for large-scale infrastructural projects. These events are often one-off occasions where architects and the broader design team might hold open forums to present the project visually and to offer space for feedback. However, many are critical of this process as 'the planning system is no longer deemed to be a democratic and pluralist system'[53] and no necessity to respond to feedback from the community, creating an imbalance of power. This method is also not value-free. Presentation of designs are often heavily curated and not necessarily fully legible to lay-persons and little advertisement or incentive to attend, with Stevenson positing that these events create 'temporary and illusory sense of community'.[54] If co-production seeks to facilitate a back-

52 Alba Realpe and Professor Louise. M Wallace, 'What Is Co-Production?', (London: The Health Foundation, 2010)
53 Jon Anderson, 'Talk to the Hand? Community Councils and Planning Consultation', Planning Theory, 7.3 (2008), 284-300, p.297
54 Nancy Stevenson, 'Having a Say? The Potential of Local Events and as a Tool for Community Engagement', Event Management, 24 (2020), 435-45

and-forth movement, we might observe that this type of community engagement must be sustained for local communities to move past feelings of development being done to them. Much like the broader concept of place-making, there is no one formal framework for how to carry out meaningful community engagement, but holistic principles that support it. A report authored by FLUID Architecture as part of the Royal Institute of British Architects Guide to Localism highlights areas of attention for architects engaging in this form of outreach. The report stresses the need for architects to encourage conversations 'as a listener and guide' and to value everyday conversation not always led by formal pre-determined questions.[55] Furthermore the guide, stresses the need for engagement of communities to be equitable and inclusive. This includes the location; to be accessible for those with disability and other needs, such as a creche, the timing; holding a variety of events spread across days of the week, times, and even platforms (such as online) to ensure equal opportunity for attendance.[56] An even-longer term strategy to encourage co-production at a community level might also include the organisation of a more permanent space, such as the Wick Curiosity Shop, a small archive and cultural space, founded in 2008 as part of the regeneration of the neighbourhood of Hackney Wick, London which over a number of years hosted a variety of small scale events as a 'way of improving networks within the community and encouraging people to engage in discussions about the future of the area and to interact in its public spaces'.[57]

Moving to the micro level, co-production between architects and occupiers is vital to ensure that environments of care are not only functional but embody the necessary atmosphere for the positive experiences of well-being. It is important to recognise that co-production with a focus on cancer care facilities needs to be undertaken with the full range of occupiers, as mentioned previously those receiving and providing care. Conversations between architecture and healthcare professionals should include all types of roles to support the creation of efficient places of work that support standards of care. For example, by engaging with all groups of staff members including those often

55 FLUID Architecture, 'Riba Guide to Localism: Opportunities for Architects
Part 2: Getting Community Engagement Right', (RIBA, 2011), p.7
56 Ibid., p.7
57 Stevenson, 'Having a Say? The Potential of Local Events and as a Tool for Community Engagement', Event Management, 24 (2020), 435-45, p.439

underrepresented, such as but not limited to maintenance, catering, housekeeping roles. By challenging the bias of clinical roles co-production can reveal the 'invisible and unspoken needs of hospital staff, which are fundamental to their everyday well-being'58 illuminating potentially hidden expertise not previously known.

Maggie's Centre's - charitable centres for community cancer care commissioned and run by Maggie's Trust – offer precedent for the relationship between healthcare and architectural professionals in the creation of places for cancer care.[59] The trust, as client, have established their role as a critical friend playing a direct role in the design process by contributing a rounded picture of the needs of the centre's occupiers based on medical, psychological, and social values to support the architect in their design response. However, Van der Linden et al in their analysis of architectural approaches to the design of Maggie's centres state that 'none of the designers mentioned the staff or volunteers working in the centre…[and] the combination of designers' focus on personal experience with a lack of direct user engagement introduces the risk of an unrealistic user image.'[60] Their analysis echoes the call for engagement to hear a variety of experiences. One way of implementing this might be the incorporation of a working group or forums that create space for conversation to be aligned with the beginning and ends of RIBA Workstage's, a strategy used by an architectural practice in their award-winning design of an in-patient hospice. Embedding conversations into the workflow of design might offer ways to mitigate feelings of disconnection and gain feed-forward on the implication of design decisions. Collaborating in the creation of meaningful places of care, this paper argues not simply involvement of stakeholders, but their interaction in decision-making, as Jellema et al argue 'truly placing oneself in someone else's shoes is hardly possible, being aware of this and making design decisions based on the best available information is'.[61] Co-production, that balances roles between service users and professionals, can be

58 Sarah Pink and others, 'Making Spaces for Staff Breaks: A Design Anthropology Approach', HERD: Health Environments Research & Design Journal, 13.2 (2020), 243-55, p.253

59 It must be noted that Maggie's Centre's do not offer clinical care and are therefore provided a sense of architectural freedom not available to acute clinical environments, such as in-patient cancer facilities.

60 Van der Linden and others, 'Architects' Approaches to Healing Environment in Designing a Maggie's Cancer Caring Centre', The Design Journal, 19.3 (2016), 511-33, p.531

61 Margo Annemans and others, 'Informing Hospital Design through Research on Patient Experience', The Design Journal, 20.sup1 (2017), S2389-S96, p.

a useful way to facilitate this as long as care is taken that it is not co-opted as a quick one-off or one-sided activity.

A further care that should be noted is the communication of architectural ideas and concepts when speaking with those outside the architectural profession to foster accessible and meaningful conversation. NORD Architects, describe that when co-designing their 'deliberate use of communication and new media [is] a powerful process tool that displaces any esoteric jargon'[62] thus helping to break down boundaries. In their doctoral study of shared knowledge in in-patient hospices, Bellamy highlighted the use of physical artefacts, including models of floor plans to help describe three-dimensional space for those who cannot or struggle to understand two dimensional architectural drawings such as plans, and models of patient bedrooms inspired by viewfinders to re-frame their perception of space.

Architectural atmosphere

NHS general guidance states that 'healthcare facilities should provide a therapeutic environment in which the overall design of the building contributes to the process of healing…rather than simply being a place where treatment takes place'[63] and avoiding an overtly clinical identity. Douglas and Douglas in a review of patient experiences of acute hospital settings found that 'the essence of a patient-friendly environment has more to do with what the place is like to be in, how it feels, rather than what it looks like per se'.[64] As individual experience of place is subjective, place-making urges a deeper introspection of the poetic and sensory atmosphere of place as a method to foster connection and meaning. The conceptual notion of atmosphere in architecture has been widely

62 NORD Architects, Co-Creating Architecture No. 1, 2020)
63 NHS Wales Shared Services Partnership – Specialist Estates Services, 'General Design Guidance for Healthcare Buildings ', 2017) p.3
64 Calbert H. Douglas and Mary R. Douglas, 'Patient-Friendly Hospital Environments: Exploring the Patients' Perspective', Health expectations : an international journal of public participation in health care and health policy, 7.1 (2004), 61-73

contemplated in literature, notably including the work of architects Zumthor[65], Holl[66], Caruso[67] and philosopher Bachelard.[68] A constant theme in the discussion of architectural atmosphere are the phenomenological qualities of environments related to the senses, such light, shadow, materials, textures, warmth, smells, and sounds. As Jellema et al describe it is commonly understood that perception of:

> the physical environment is experienced through bodily sensations. Sensory impressions from the environment contribute to well-being or discomfort. They affect mood and can distract from one's illness[69]

Architecture and design is inherently a visual practice, however there is much criticism that contemporary architecture has lost 'the potential transactions between body, imagination and environment'[70] as a result of what architectural theorist Juhani Pallasmaa describes as ocular-centrism dominated by visual stimuli at the expense of other sensory qualities.[71] Pallasmaa argues that atmosphere must move away from exterior focused imagery and form to be a careful consideration of a 'strengthened sense of materiality and hapticity, texture and weight, density of space and materialised light'.[72]

The manipulation of an architectural atmosphere is therefore of extreme importance for cancer care facilities. Words relating to 'home' and 'homely' are commonly used words to describe the atmosphere of care environments and should be carefully interrogated or avoided so that the design can instead respond to the more tangible themes for example, such as safety, reassurance, comfort that might offer more tangible design responses and pose less potential for alienation. A key strategy in developing architectural atmosphere is the application and choice of materials. Though different materials offer

65 Peter Zumthor, Thinking Architecture (Basel; Boston, Mass.: Birkhaüser, 1999) & Peter Zumthor, Peter Zumthor : Atmospheres : Architectural Environments, Surrounding Objects (Basel: Birkh??user, 2006)
66 Steven Pallasmaa Juhani P. rez G. mez Alberto Holl, Questions of Perception : Phenomenology of Architecture (San Francisco, CA: William Stout Publishers, 2006)
67 Adam Caruso, The Feeling of Things (Barcelona; Hove: Poligrafa ; Roundhouse [distributor], 2009)
68 Gaston Bachelard, The Poetics of Space (Boston: Beacon Press, 1969)
69 Jellema and others, 'The Roles of Cancer Care Facilities in Users' Well-Being', Building Research & Information, 48.3 (2020), 254-68, p.255
70 Kent C. Bloomer and others, Body, Memory and Architecture (New Haven, London: Yale University Press, 1977), p.77
71 Juhani Pallasmaa, The Eyes of the Skin : Architecture and the Senses (Chichester; Hoboken, NJ: Wiley-Academy ; John Wiley & Sons, 2005), p.19
72 Ibid. p.37

visual interest, a choice of material can also offer a variety of other sensorial qualities. For example, St. David's Hospice in Newport, Wales offers precedent for the use of non-standard materials, that were approved for use including in bedrooms. Carpet was used in their central circulation zones, resulting in a softened acoustic atmosphere reducing the tell-tale rattle of trolleys and footsteps on hard flooring. They furthermore installed curtains in bedrooms that could be deep-cleaned or easily replaced if needed for quarantine purposes.

The acoustic atmosphere is just as important as the visual, with aural distractions potentially disrupting rest or feelings of disconnection. Yet the benefits of designing the aural and other sensory qualities should be carefully balanced to not completely erase all signs of clinical practice. Jellema et al describe hospitalised patients as being subject to a 'sense of liminality, of being 'cast out of' a normal reality into liminal space'[73] owing to the institutional nature of care. An anecdotal description of inhabiting a care facility with non-standard finishes described a sense of silence that felt isolating due to the lack of reassurance that they could be heard if in need of help. The tactility offered by traditional curtains is both soft visually, but offers feelings of warmth, protection, and privacy. Yet there are many barriers to the application of materials perceived as non-standard, in healthcare facilities, namely, standard practice, infection control and lack of innovation. Research conducted by McLaughlan and Kirby across environments of palliative care revealed how 'staff perceptions around safety had not kept pace with the realities of contemporary infection control materials' and that there were often 'unexpected benefits – such as ease of cleaning' alongside the creation of a more sensory rich environment.[74] In search of quality places of care, it is posed that architects and designers must interrogate and challenge these perceptions to pose new experiences, and not fallback to the ease of replicating historical templates. Umeda Hospital designed by Japanese architects, Kengo Kuma & Associates is another demonstration of the internal use of natural materials, such as timber, again typically seen as inappropriate.

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73 Jellema and others, 'The Roles of Cancer Care Facilities in Users' Well-Being', Building Research & Information, 48.3 (2020), 254-68

74 Rebecca McLaughlan and Emma Kirby, 'Palliative Care Environments for Patient, Family and Staff Well-Being: An Ethnographic Study of Non-Standard Design', BMJ Supportive & Palliative Care (2021), bmjspcare-2021-003159, p.5

The use of timber in Umeda, (though an international project which may have different regulations on the use of materials) offers both a positive and negative precedent in the creation of in-between spaces, such as waiting areas. The condition of waiting is common in healthcare facilities; Maggie Keswick Jencks describes her experiences of inhabiting places for cancer care as having 'overhead (sometimes even neon) lighting, interior spaces with no views out and miserable seating against the walls all contribute to extreme mental and physical enervation. Patients who arrive relatively hopeful soon start to wilt.'[75] The waiting area above though tactile and warm feeling offers little architectural interaction or distraction in its design that might improve the well-being of those waiting. Hosking and Haggard describe that a 'beautifully decorated clinic with nothing whatever to look at apart from notices on walls, and every window is blocked off with frosted glass; the effect is bleak and soulless'[76] and that boredom and claustrophobia are very real implications for those spending longer amounts of time in one place, such as a waiting room or bedroom.

Though Maggie's Centre's are non-clinical spaces, there are many elements of their design that can be applied as appropriate inspiration for the consideration of architectural atmosphere. For example, small details that might be overlooked as a secondary part of the design are actively utilised as features, such as exposed ceiling beams at the Maggie's Centre in Dundee by Gehry Partners, described as having found purpose in 'allow[ing] visitors 'to focus their attention on something 'and 'to lend itself to meditating'.[77]

The introduction of a small contemplation space, nick-named the cwtch at the Maggie's Centre in Cardiff, designed by Dow Jones Architects is a different scale of space through the manipulation of volume, light, and colour. The contrast of this against the rest of the building offers a place within which occupiers might be able to take control of their own

75 Keswick Jencks, 'A View from the Front Line', 1995), p.21
76 Hosking and Haggard, 'Healing the Hospital Environment: Design, Management and Maintenance of Healthcare Premises', 1999)
77 Van der Linden and others, 'Architects' Approaches to Healing Environment in Designing a Maggie's Cancer Caring Centre', The Design Journal, 19.3 (2016), 511-33, p.528

privacy and or accommodate the 'the minute situations of daily life'.[78] This is felt to be particularly relevant for cancer care facilities in the recognition of the scope of emotions that might be felt in a place where members of the public may receive potentially bad news, or for staff members who need to take time to break-away from public facing duties. It is vital; however, we recognise the limitations of Maggie's Centre's as precedents for the design of clinically led environments. There must be a resistance to the urge to blindly replicate approaches their approaches to materiality and tactility without fully interrogating the detail of why they appropriate and relevant to the in-patient spaces, and how they might be used to enhance the experience of the occupiers. Developing a new approach to sensory design for cancer care should take heed from the 'Maggie's' approach as a holistic vision but with appropriate awareness of clinical factors.

Moving to consider external materiality, this can be used as an expression of the architectural intent that is out-ward looking and seeks to create an identity of the place. This aligns with the goals of place-making recorded in the DCfW report that states materials should be 'robust, sustainable and contribute to character.'[79] Two examples of this are buildings designed by NORD Architecture, a Danish architectural practice who seek to 'reinvent institutions'. The first is the Copenhagen Cancer Centre, a rehabilitation and community centre for cancer patients, not dissimilar to Maggie's Centre's, designed around an internal courtyard. The outward facing façade of the cancer centre is clad in white silver aluminium metal panels, with the inward facing façade clad in slim vertical timber panelling. The variation in the external and internal cladding adds to the creation of unique characters for the building that accommodate different phenomenological perceptions of the environments. The metal cladding offers a sense of solidity, where the timber cladding of the courtyard invokes connotations of natural landscapes and will patina with age, perhaps invoking a sense of sanctuary and calm. The Urban Hospice, also by NORD, is clad in a golden metal, akin to bronze, that will slowly weather along with the materiality of its surroundings. An important aspect to note in the choice of cladding material, is that the aesthetic choice does not override the potential impact. For

78 Pallasmaa, The Eyes of the Skin : Architecture and the Senses (Chichester; Hoboken, NJ: Wiley-Academy ; John Wiley & Sons, 2005), p.65
79 Wales, 'Placemaking Guide ', 2020)

example, anecdotal conversations held with a healthcare facility clad in a metal revealed that the cladding upon inhabitation interfered with mobile phone reception within the hospice, leaving patients and visitors feeling isolated.[80] This therefore serves to highlight even material choices can have a tangible effect on the experience of those within the facility, heightened for a cancer care environment where occupiers may have intensified emotions.

An additional aspect to consider when discussing material, is the ability for the material choice to contribute to the generation of wider place-making, that is contributing to the local and vernacular character. Peter Zumthor's Apartments for Senior Citizens, Chur, Switzerland, utilised local tufa masonry, a material local to the area, that grounds the building in its context. The images below demonstrate how the masonry, as indicative of Zumthor's tectonic approach to design, acts as an integral structural component, not only cladding the external but offering tactility to the interior environment. A tectonic approach to the material choice, has the potential for not only creating sensory benefits within the internal atmosphere but reinforcing an impression to the local community that the building 'belongs' to the area and rejects an overly institutional addition to the area.

As a final point of consideration, as projected changes to global demographics demonstrate populations are living longer and with complex co-morbidities becoming more prevalent, it is suggested here that environments for cancer care must become more resilient in their architectural atmosphere. This might mean, resilience in future-proofing material and atmospheric approaches to accessibility, such as ease of navigation and wayfinding. This might include for example those that suffer from dementia, who have specific spatial requirements, such as confusing reflective or floor finishes with a shine as being wet or slippery.[81] Attention to additional atmospheric needs refers to the avoidance of 'othering' those that are not able-bodied or the assumed needs of those affected by cancer as set out by Boys in the earlier discussion. Investing in research of how this incorporated into settings of cancer care may be of benefit to avoid future piecemeal adaptation that fractures the coherency of the original design.

80 This was eventually remedied at additional expense with signal boosters.
81 Alzheimer's Society, 'Making Your Home Dementia Friendly ', 2020), p.8

Integrated landscapes

Describing the qualities physical form that contribute to a well-made place, the DCfW's Placemaking Guide, stresses the importance of the conscious design of the natural landscape. The guide emphasises that attention should be paid to the creation of landscapes that are 'high quality…attractive setting[s] and supports biodiversity' that provide 'well-integrated green infrastructure…[with] connections to nature at different scales'.[82] This element of place-making aligns with the observations made in the previous section regarding the relationship between nature and positive outcomes in health and well-being, demonstrating that 'connection with nature is beneficial – even vital – for health'.[83] Fostering a relationship with nature has profound impact on the way in which we experience healthcare settings and the effects of clinical care, especially related to cancer care. The experience of the natural landscape is enacted at multiple scales; from the urban, how the building integrates with its local surroundings and the entirety of a site can be seen as a healing tool to the bodily scale, where direct connections with nature can promote positive interactions with institutional settings.

Considering the natural landscape at an urban scale of place-making, a key element is the integration of the landscape and landscape designers as valued and integrated members of the core design team. Thus, working explicitly to challenge the stereotype of landscape being an element that might be applied to the site as an afterthought once the built elements are finished, the landscape is something considered from the outset of the project and embedded into the holistic vision for the site. This is an approach championed by Maggie's Trust that explicitly writes into their combined architectural and landscape brief that they 'ask our landscape designers and our architects to work closely together from the beginning of a project.'[84] Protecting the landscape designer, and therefore the landscape itself, as an active stakeholder in the creation of quality places is furthermore a critical requirement. For example, sites dedicated to healthcare facilities, have historically owing to growing pressures on services seen piecemeal development

82 Wales, 'Placemaking Guide ', 2020), p.10

83 Clare Cooper Marcus, Sachs Naomi A., 'Therapeutic Landscapes : An Evidence-Based Approach to Designing Healing Gardens and Restorative Outdoor Spaces', (2014)

84 Maggie's Keswick Jencks Cancer Caring Trust, 'Maggie's Architecture and Landscape Brief', n.d), p.5

extending the capacity and provisions of care often at the expense of their surroundings, such as green areas.[85] Therefore, in line with principles of place-making, it is proposed that such approaches might be future-proofed against such development, to ensure that future expansion does not creep to the edges and boundaries of a site, but furthermore do not fracture the cohesion of the original vision, design intent and delivery.

An example of this is the orchard and community gardens that surround the Royal Edinburgh Hospital. The orchard, as one of a few remaining urban orchards was granted protection against future encroachments of the hospital, therefore providing a sense of continuity and community ownership. By protecting elements of the landscape that are accessible to local communities offers opportunity to strengthen connections with the residents in providing assurances that the landscape as a shared amenity is not reneged. Extending upon the potential connections between the landscape and the stakeholders of the place, whether occupiers or local community, a well-developed landscape can also support the integration of other activities within the boundary of the site, and not only those associated with potentially cancer care. To encourage ‘life between buildings’, an aphorism coined by Gehl Studio, principles of place-making can encourage the use of landscape to not merely be routes for movement but beacons that encourage visitation to the site.[86]

Though not a contemporary precedent we might look to the Pioneer Health Centre, built as part of the ‘Peckham Experiment’ - a well-known action research project into public health undertaken by medical professionals in the early half of the 20th century in Peckham, South London. This project demonstrated that the integration of a variety of leisure and social facilities in and around clinical buildings, encouraged residents not seeking medical care to participate in their own management of health and well-being. In a more contemporary application of this, place-makers could consider even more bold roles for the landscape. As Sumita Singha describes, the sustainability of produce consumed by hospitals could be integrated, noting how one newly built hospital not only

85 Marcus, 'Therapeutic Landscapes : An Evidence-Based Approach to Designing Healing Gardens and Restorative Outdoor Spaces', (2014)
86 Gehl, Life between Buildings : Using Public Space (Washington, DC: Island Press, 2011)

uses Fairtrade products and locally sources as much food as possible. Here Singha goes further to question if hospitals themselves could become places for production of food, whether for use by the care facility itself or those nearby.[87] The integration of this type of activity may also pose benefits to those occupying care facilities by working to diminish perceptions of liminality and disconnection to the outside world, with potential for shared connections and sensory interaction, such as hearing the events or activities taking place nearby.

Moving to reflect on the buildings siting with the landscape, it was noted in earlier sections that boundaries and thresholds of experience are of importance in care environments, especially for those affected by cancer. There may feelings of reluctance toward entering an institution where care may be 'done' to them and heightens health anxiety placing, therefore placing particular significance on the journey and entrance to the site. Design intent that builds upon the 'interplay between lines of passage and lines of sight can both reinforce the power of architecture to identify place'.[88] The demotion of vehicular priority was one of the original drivers for the place-making movement in the mid 20th century, yet despite contemporary calls to encourage more sustainable modes of transport, provision of car-parking remains a priority. It is not suggested that vehicle access is abolished due to concerns of equitable access, rather that the first-hand experience of journeying towards and through the site can promote more positive experiences. For example, below are images of competition entries for the New North Zealand Hospital in Denmark by Herzog and de Meuron Architects and CF Möller Architects that utilise different potential design approaches to the sequencing of entrances.

Herzog and de Meuron's winning competition entry, that is currently under construction, disperses vehicle parking around the perimeter of the site, with a dedicated drop-off style entrance. Worth noting regarding this scheme, at only three storeys high at its maximum, is relatively low-lying and works against stereotypical images of tower-like buildings that dwarf the individual. The chair of the regional council responsible for the design competition noted that this approach promoted 'a human scale despite its very large

87 Sumita Singha, 'Future Healthcare Design', (2019)
88 Simon Unwin, 'Analysing Architecture', (2009) p.137

size.'[89] Looking to CF Möller's design, parking is dispersed throughout the site, dominated by a ring-road that offers multiples points of access to the site. This not only offers benefits of encouraging engagement from the local community, not limited to a single point of entry but in maximising the potential for journeys and routes across the site. The design of entrance journey unique to this project utilises a main vehicle entrance at ground level but offers an elevated landscape that takes you either to the entrance or onto open green areas that are accessible to the public that do not disturb clinical areas.[90]

Focusing in on closer connections to nature, the brief at Velindre aspires to 'enabl[e] a closeness to nature'[91] for those who occupy the cancer care facilities. Owing to the pioneering work of Ulrich and others many healthcare facility commissioners and designers outline those new developments should include access or views to some form of natural landscape of greenery. Views out from windows are a simple effective way of achieving this, however some care facilities have maximised this further by integrating landscapes with the application of a courtyard typology. This can be seen in Herzog and de Meuron's New North Zealand hospital, mentioned previously, with many small courtyards puncturing the main mass of the building form. This approach maximises opportunity for views onto nature but supports a potential reduction in travel distances for occupiers of the building.

Another building that utilises a courtyard typology to maximise a human scale connection to nature, is Herzog and de Meuron's REHAB Basel, a rehabilitation clinic in Basel, Switzerland. The building is sited in an urban location, with a green buffer to the boundary edge. The rectangular mass of the building is opened by the insertion of courtyards, enclosed on three sides with different sensory and functional qualities, such as the water garden linked to the hydrotherapy area. This provides a good example of how the landscape can contribute to humanisation of the functions within.

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89 Daily Scandinavian, Hospital of the Future in Denmark (2015) <https://www.dailyscandinavian.com/hospital-of-the-future-in-denmark/> [accessed 18th April]

90 C.F Möller Architects, New North Zealand Hospital (n.d) <https://www.cfmoller.com/p/New-North-Zealand-Hospital-i3067.html> [accessed 18th April]

91 Trust, 'Design Brief: A Velindre Cancer Centre for Future Generations', n.d) p.8

Moving deeper into the work of healing gardens and therapeutic landscapes that have become popular in healthcare design, Clare Cooper Marcus describes that:

> in many cases, there is little understanding of the essential elements of a successful garden. Two chaise lounges and potted plants on a rooftop are labelled a "healing garden." A stark courtyard with minimal greenery, few places of privacy, and uncomfortable seating is designated a healing garden. Labyrinths have become fashionable with little understanding of their purpose, the need for privacy, or the physical ability of potential users.[92]

Marcus and Sachs describe that healing landscapes can be broken down into two broad categories, a therapeutic garden where benefits are felt via basic interactions of simply being in the environment and enabling gardens that involve clinical members of staff to engage activities in benefit of patient's care, such as rehabilitation exercises by performing garden maintenance. With regards to such healing gardens, it is important to remember the physiological impact of symptoms and treatments that may be felt by those affected by cancer. For example, some treatments may cause sensitivity to direct sunlight necessitating creation of shaded areas, some treatments and symptoms may result in fatigue requiring opportunities to stop and rest, and others might result in feelings of nausea that may be exacerbated by certain fragrant smells.[93] It is also important to note that some affected by cancer may be immuno-compromised and therefore may have limited ability to interact with outside environments, this poses a design challenge for architects and landscape designers to find innovative ways of incorporating this into the building, potentially via dry gardens, internal courtyards etc. Moreover, there are other broad challenges faced by the inclusion of not only healing gardens but larger natural areas to ensure that these places remain valued and used and do not turn into what Cooper Marcus calls a 'green desert'.[94] This might include making sure the detailed design of the inhabited spaces are appropriate and inclusive and that they have an established maintenance plan to make sure that they are usable during all season.

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92 Clare Cooper Marcus, 'The Future of Healing Gardens', HERD: Health Environments Research & Design Journal, 9.2 (2015), 172-74, p.172

93 Marcus, 'Therapeutic Landscapes : An Evidence-Based Approach to Designing Healing Gardens and Restorative Outdoor Spaces', (2014)

94 Ibid.

4. Conclusion

Reflecting on the creation of quality places of care, this review looked to explore the contextual circumstances of environments of care before introducing place-making as a strategic approach to the creation of meaningful places for positive health and well-being outcomes. This first explored a brief history of development of western environments of care; seeing how ancient care environments were based on holistic landscapes not confined to one building, before jumping ahead to modernist explorations of the role of sunlight and natural ventilation in health, finishing with the influence of post-war development prompting a large building programme of analogous developments across the country. This was followed by a discussion regarding the psycho-social experiences of receiving - and giving - care and how this changed during the latter half of this century and again subsequently because of the COVID-19 pandemic. Regarding cancer care specifically this was found to have emphasised how the experience of the building of care is a mediation of the realities of being affected by a cancer diagnosis, not only psychologically but physiologically. The evolution and experience of care is posed here as critical to the creation of quality spaces and places of care as this contextual knowledge is necessary to challenge stereotypes and personal assumptions about the needs and spatial requirements of its occupiers, a central tenet of the ethical role and responsibilities of architects.

As the central theme of this review, place-making was introduced, looking at its origins and interpretations as a design attitude. Despite its origins as a rejection of the suburbanisation of America, its principles have been adopted globally as a humanistic design philosophy that places people back into the heart of the not only the design outcome, but more critically, the design process. Further contemporary interpretations have come to stress the people-centred focus central to place-making must continue to evolve to ensure that understandings of people are based on the lived experiences of key stakeholders and are inclusive of their true requirements. Three key themes explored here- co-production, architectural atmospheres, and integrated landscapes – that respond to the core elements of place-making (activity, meaning and physical form) offer

approaches that can support the production of quality places. Co-production, as a method of facilitating meaningful collaboration allows opportunities for innovation based on the shared expertise of healthcare and architectural professionals, but also architectural professionals and the local community. Key to meaningful co-production of care environments is the inclusion of all roles especially those often overlooked, both clinical and non-clinical to work against clinical biases. The creation of architectural atmospheres was the second strategy, with the benefits and challenges of multi-sensory design discussed. The overall aspirations for the perceptions of space or place are important to unpack in relation to the experience of the occupier, for example avoiding highly subjective descriptors such as 'homely' and exploring others such as safety or reassurance. In search of these atmospheres, the use of varied materials was discussed. For the creation of quality places, natural materials that eschew connotations of wipe-clean and institutional settings are essential but are not yet seen as standard in healthcare design. Value must be placed on protecting these from being immediately dismissed or value engineered out in later stages of the design process. The final strategy looked at the integration of natural landscapes aligning with the view that entire sites could be healing, not just individual buildings. Active landscapes that surround care facilities can provide a plethora of benefits, such as providing respite for staff and patients and enabling landscapes that host active care of patients and the local community. Much like the consideration of atmosphere, is placing people at the centre of the designed experience, for example as discussed considering how the entrance sequence may be positive and uplifting by a landscape approach that places value on the human scale interaction rather than vehicular priorities. Place-making as an outlook is one that is forward looking, therefore emphasising that interventions made should not be temporary or flexible but protected to ensure that original design intentions are not eroded over time. Much like the principles of place-making proposed by Punter in 1991, that suggests if any of the elements are neglected this results in a degrading of the quality of place, the three themes discussed here, though not an exhaustive list, should be considered holistically and as part of a vision for cancer care environments that are based on the knowledge of people, not aesthetics or cost.

It is worth noting that this review has highlighted several precedents throughout the discussions of the themes., as part of a desktop study. Here we consider it vital that learning about place-making and evaluating precedent as also being about developing a community of practice. This might draw from the strategy of co-production and co-design to visit and speak with stakeholders of other successfully delivered cancer care facilities to reduce visual and aesthetic bias and echo chambers of architecturally lauded design that does not consider stakeholder experiences or dampens their narratives. Not discussed in the scope of this paper, but an important aspect to be further researched is the role of Post Occupancy Evaluation as not only a tool to measure sustainability outcomes but social and functional outcomes of the design.

Summarising Planning Policy Wales, the DCfW Placemaking Guide states that embedding place-making ‘should not add additional cost to a development, but will require smart, multi-dimensional and innovative thinking to implement’.[95] We might see here that the role of the architect is to be an active driver for change during the design process and for design outcomes. Place-making asks that architects and the wider design team must be engaged in critically challenging preconceptions of standard practice and methods of designing. Aspirations for quality places of cancer care, that are holistic and integrated into their local communities rejecting the typical institutional aesthetics requires that ‘the desire for change must not be neglected, resisting an impulse to deliver architectural environments from a historic template though it may be easier or quicker.’[96] Pushing for innovation may have numerous institutional barriers but utilising strategies with place-making in mind can present methods to overcoming these. The creation of quality places therefore relies on a willingness to challenge standard practice and to enable a shift of what is the perceived value of people-centred design alongside clinical needs.

Moving forward

Drawing on the concept of Arnstein’s ladder of participation, it is considered that consultation is a form of tokenism and does not fulfil the requirements needed to shift the

95 Wales, 'Placemaking Guide ', 2020), p.6

96 Bellamy and others, 'The Dying Patient: Taboo, Controversy and Missing Terms of Reference for Designers—an Architectural Perspective', Medical Humanities (2020), medhum-2020-011969, p.5

hierarchy of democratic decision-making. Reflecting upon the themes discussed in this paper, several suggestions are proposed that might provide strategies for approaches that draw on the principles of place-making. The first concerns the use of language and emphasises equity and collaboration between architects and other stakeholders by abandoning jargonistic terms of reference that are specific and commonplace to the architectural industry. This may help not only reduce the bias of the architect as the expert but also encourage those who may not have confidence describing space and place to meaningfully participate discussions. This also extends to the type of drawings used when in consultations with laypersons, technical drawings, such as orthographic projections of plan and sections may not be easily legible. The use of three-dimensional models that are interactive offer potential pathways for not only equitable interaction but opportunities for discussion. The second theme of equity emphasises the need for the design process to include all the types of stakeholders of the scheme, working hard to challenge clinical biases, and uncover the hidden voices and expertise from less visible groups, for example those members of staff who work in housekeeping or maintenance. Further to their inclusion is the equal value placed upon their subsequent partnership in the design process. Embracing an equitable approach also calls for the need to shut down stereotypes and assumptions made without due understanding of particular social and spatial requirements. This approach is also applicable when broadening the scope of engagement to the wider community and highlights the need for any community engagement plans to be inclusive and accessible. This might mean considering how members of the community are reached if they do not have access to the internet or have disabilities that might preclude their inclusion in discussions, for example visual or hearing impairments. The third theme suggests that any approach taken should invest in time working with others and avoid situations of one-off consultations and engage instead in back-and-forth conversations that can create space for testing and exploration of ideas. Though this is constrained within the stages of design work, making space for this type of co-production can work to futureproof and strengthen feelings of ownership. Furthermore, the timing of collaborative working sessions should consider those whose roles might exclude them from attending sessions during typical working hours, for example those who work night shifts or have childcare responsibilities.

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