# Fitting the human body into 3D printed houses: A requiem to the Phallocene

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**Abstract** *This paper connects two disciplinary areas to create new knowledge in the fields of sustainable housing and the analysis of the human body in time. The first knowledge area is that of sustainable housing, and how to reduce greenhouse gas emissions (GHG) in the built environment. Currently, the construction industry in developed countries brings together multiple elements in a build site, all of which may contribute to climate change, and produce complex structures that can be hard to maintain in terms of environmental matters. In contrast, 3D printed houses are simpler, have lower emissions, and involve a straightforward process of creating an entirely new house on site. Further, 3D printed houses can be made from the very earth where the house is to be built. The caveat for 3D printed houses, is that the load bearing capacities of the walls can limit the size of construction, even though the design possibilities for 3D printed houses are augmented. The accompanying and interlocking aspect of this paper is the argument through history that the human body responds to the dictates of desire, here termed as 'the phallocene'. The notion of the phallocene is derived from literature on the human body and desire that states that far from playing a merely irrational role in human life that is dominated by reason, desire creates worlds, and in the case of this paper, the world of the Anthropocene, a reality made by humans, and producing climate change. Hence, this paper conjoins two key concerns, arresting climate change, and understanding human behaviour through time as bodies.*

**Keywords** *3D printed houses, the phallocene, climate change, human body, desire*

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# 1.    What is the Phallocene?

The fundamental contention of this paper is that something profound happened to the human body and its processes of inhabitation once *Homo sapiens* transitioned from being nomadic hunters and gatherers to becoming settled in established cities (Cummings and Harris, 370-375). Admittedly, there is evidence of sedentary life, settlement, and social hierarchy before the Neolithic agricultural revolution (Shavit and Sharon, 1-8), yet the archaeological and anthropological evidence suggests that these formations did not sustain in the same way as the sedentary and hierarchical modes of human life have persisted since 10,000 BC (Weisdorf, 580-586). Hence, the argument put forward in this paper is that the post-10,000 BC human and environmental history, referred to as the Holocene, has provided the fluctuating conditions for the development of enduring and complex human hierarchy and sedentary life, that has led through time and in a complex-interconnected manner to the present-day situation of global warming and the Anthropocene (Horn and Bergthaller, 52, 176-178). The climatic conditions of the Holocene, though variant, have not been as variant as pre-Holocene conditions, and therefore have provided the platform and backdrop whereby human society has developed through time into the global and technological enterprise that it has become today (Galaz, 22, 121). However, the phallocene (Cole 2021, 61-75), as a conceptual figure integral to this development, does not begin in alignment with the Holocene, but rather starts afterwards, once the nascent Holocene cities had definite state religions serving permanent hierarchies (Lane, 480-490).

This paper suggests that the phallocene begins at approximately 4000-3200 BC (Table 1) in the Mesopotamia Crescent and Egyptian Nile Basin, as the ancient cities of Uruk and Memphis saw the structuring of state religions serving absolute monarchies and their accompanying priesthoods (Starr, 106-123). Hence, the phallocene is an argument for human behaviour and the body in time that corresponds to Braudel's 'longue durée' (Braudel and Wallerstein, 171-175), as well as French feminist literature from the 1970s and 1980s (Cixous, 1950-1959; Kristeva, 10-15), Deleuze and Guattari's planes of immanence (Deleuze and Guattari, 1988 1-250), and Guattari's schizoanalytic cartographies (Guattari *Schizoanalytic cartographies,* 2013 20-40), as one tranche of the 4 zones of the unconscious diagram that pertains to the Anthropocene (Cole, 2021 14-15). Admittedly, human sexuality and desire had been curtailed and controlled before 4000-3200 BC, and the actions of the phallocene in time afterwards are not

consistent, homogenised, or regular. Neither does this argument suggest that shamanic societies are ideal, or that state enforced religion immediately entirely overtook and/or overturned shamanic/animist belief, which, of course, still exists today. Rather, the first turning point in the phallocene (4000-3200 BC) demarcates a threshold, after which the tendency to augment the dislocation of human reality from lived experience and nature through sexuality (i.e., via state backed religious myth and fantasy) has increased, and religion and human belief has gradually turned away from situated, immediate knowledge(s), learning and experience (Cole and Somerville, 188-193).

**Table 1: The History of the Phallocene (Cole, 2021 81)**

| Plateaux | Dates | Pedagogy (https://iiraorg.com/the-phallocene/) |
|---|---|---|
| **pN1** | 4000–3200 BC | Examination of earliest establishment of state religions outside of shamanism |
| **pN2** | 500 BC | Inquiry into earliest monotheistic belief, e.g., Judaism |
| **pN3** | 600 AD | Learning about the establishment of Christianity and Islam |
| **pN4** | 1820 AD | Examination into the working week |
| **pN5** | 1996 AD | Inquiry into the development of the internet |

*Index*: p = Phallocene, N = Now (denoting learning in the moment)

The pantheon of gods and their actions that were created in ancient Egypt and Mesopotamia are enduring myths that establish the basis for the phallocene, and a demarcation from a nature-inspired, localised set of knowledges and rituals founded on shamanic practice (Eliade, 55-78). The next threshold that defines the phallocene (Table 1), is the beginnings of the dissolution of the pantheon of gods, and a 'phallic-directedness' (control of human sexuality) towards one God, firstly through Judaism in approximately 500 BC, and latterly though Christianity and Islam at 600 AD (Teeple, 23, 175; Cline and Graham, 90, 102). One should not underestimate the immense shift and necessary controls that had to be put in place to make this threshold function, as communities had grown accustomed to multiple gods, and their powerful stories had become wrapped up in the desires

and actions of everyday life, just as the pantheon of gods had previously sought to replace nature worship and shamanic ritual. The thesis of the phallocene designates a continuity between thresholds as has been described, in that power was centralised and augmented through worship, ritual, and the development over time of a means to encourage human sexuality and vitality to be sublimated into a mode of belief that could be controlled by the state (Whitehouse, 1, 34, 90). Earlier monumental buildings such as the pyramids and ziggurats were replaced by cathedrals and mosques, as power was solidified in the figures of kings and sultans, who embodied the belief in one unknowable and mystic God, rather than participating in otherworldly projected adventures as had the pharaohs and ensi before them, with their pantheon of gods to become imbricated within. In effect, the multiple narratives of many gods were replaced by the worship and belief in one unknowable God, and all that this assumed through the stories of Jesus and Mohammed.

The phallo-directed action of belief in one God has functioned for the last 1,500 years, and is still extremely important, as Christianity and Islam continued to be practised in many parts of the world and are fundamentally embedded in many state and monarchical systems (Mortimer, 7-13). The human body must negotiate and comply with the dictates of these beliefs and practices, and their effects on sexuality. However, in unison and complementary to the phallo-directed belief in one God over time, is the rise of commerce and latterly of global capitalism. It is after 1820 AD and the industrial revolution (Khan, 320-330) that the human body has begun to conform to the dictates of the working week, whether in factories, or through the mechanisation of activities such as transport and agriculture (Williamson, 270-280). Hence, the multi-layered influence of the phallocene on the human body over time and through history had begun to conform to the demands of machines, and in the case of factory workers, they can live for much of their lives within them. The actions of machines on the human body through work have been described by Engels (2003 1246-1249) and theorised by Marx (2004 256-352) in unison with capital, and with the dual capitalist goals and intent of profit and production. In this context, the phallo-directedness of work harnesses every possible energy of the human body, has (re)focused them towards making money, and this great force through history has gradually come to supplant and dominate the previous phallo-movements of multiple gods and belief/worship in one God. The simultaneous curtailment of divergent sexual activities and the enhancement of myth making through work (e.g., that it necessarily leads to great riches/happiness/power), has seen the world remade by

humans to the benefit of industrial production, and the development of an immense inter-connected labyrinth of interests and exploitation, that has seen, for example, the rise of the use of fossil fuels to power the global economy (Malm, 21-56). This enormous international energy distribution, use, and surplus system has seen the human body integrated into this system as part of the machine, until the phallocene has passed another threshold in the 1990s (Table 1), and digital technology advanced sufficiently to capture the sexual and vital energies of humans through the internet and the attention it demands.

Research into the relation between the development of the internet and the human body is ongoing and multifarious (Pettman, 1-32). For the purposes of this paper, and the lineage of the phallocene, the online universe has augmented, accelerated, and diversified the ways in which the human body, mind, and imagination may be captured and controlled by global capitalism (Crary, 1-34). The modes of capture of the multiple gods, one God and the working week are ongoing and still present, but the internet has presented another and, in many ways, deeper mechanism for the control of the human body. Previous mechanisms for the control of the human body largely relied on external forces, such as slavery, the death sentence, debt, imprisonment, and collective societal forces of, for example, prayer, ritual, and ceremony (Foucault, 21, 45, 190). The internet relies for its control on desire, interest, curiosity, boredom and digitally enhanced and communicated images that may capture the imagination and create false expectations and hopes in the onlooker. This analysis of the human body is not dominated by phenomenological or psychological concerns (Merleau-Ponty, 23-187), as the human in the body is not centralised, rather, an inter-connected matrix or material cartography is produced après Guattari (Guattari *The Three Ecologies,* 1996 34). In terms of the influence of the internet on this human body, never has such a powerful technology been able to penetrate and access the intimate desires, beliefs, and choices of individual people. As such, the internet presents an epiphany of the phallocene, enabling false and mythological scenarios to circulate and proliferate across the world with a never-before-seen efficiency and power. In sum, the phallocene has been realised through the internet, whereby human sexual energy is extracted and directed, and work has transformed from a pre-defined and segmentally time-based activity to a potentially 24/7 preoccupation (Crary, 45, 76) driven by capital. As such, in the Anthropocene, wherein action on climate change is paramount to stave off the sixth great

extinction event, doing something to account for the phallocene, is critical to enabling human action that could make a difference.

## 2.      Why 3D printed houses?

As described above (section 1), the phallocene is an unconscious drive, that has reached and surpassed thresholds throughout history (Table 1) and, as such, changed in nature, power, and ability to capture the human body. These changes in nature, such as the progression from multiple god worship to one God worship have happened incrementally, and in variant manners across the world. However, today, climate change in the Anthropocene is an existential threat to human survival, that is continuously present in the moment (N), and as such, demands that we do something about it (Tong et al., 1-22). Table 1, whilst presenting the thresholds or plateaux wherein the phallocene has changed in nature (and become other), also demonstrates a pedagogic figure, that shows how the different learning(s) that constitute the phallocene may be undone, or revised as levels of learning, which is a strategic thought process, to be executed in the Anthropocene (Cole, 2020 31-37). The result of this thought process is to follow one of 3 options:

A)  Return to a state before the phallocene, wherein sexual impulses are not controlled by the mechanisms as demonstrated in section 1 and in Table 1 (i.e., shamanism).

B)  Carry on as if nothing has happened, and the phallocene is entirely natural, and cannot be altered (and wait for the next threshold).

C)  Try and do something about the phallocene that could help with climate change in the Anthropocene.

In the context of this paper, 3D printed houses are offered as a response to the third point, the most feasible path forwards in the Anthropocene. However, following the third point also opens the suggestion that 3D printed houses are not a solely technological or economic solution to climate change (Garrett, 70-75). Rather, 3D printed houses present a technological, social, and ecological process that helps the human body and its desires to inhabit planet Earth, as presented above through the history of the phallocene (Table 1), to confront the learnings of the $pN_x$, and to provide a platform for adaption in the Anthropocene. Hence, this is not a solely technological paper, that sets out to explicitly show how 3D printed

houses could avert climate change, but it is speculative and affective (Dunne and Raby, 55, 90-120), and that integrates knowledge of 3D printed houses with human desires and human bodies to try and influence the future. This integrative process results in several points for the phallocene and 3D housing that should be noted:

i) Manufacturing techniques have advanced sufficiently for houses to be entirely 3D printed (El-Sayegh, Romdhane and Manjikian, 1-25). However, this currently does not predominantly happen beyond experimental and research models. Hence, the move to 3D printed houses must be accelerated in the 'industrial-consumer' zone of making real and usable houses, so that advanced manufacturing may be part of the solution to climate change and anthropogenic transformations of planet Earth, rather than helping to retain the construction industry as one of the negative contributing factors in the Earth's biosphere (Zuo et al., 278-286). This paper furthers this acceleration by theorising the phallocene, one of the unconscious drives of the Anthropocene connected to desire and the body (section 1) and extending it to the positing of printing 3D housing in this context, i.e., by recognising the desires and drives that constitute housing (see section 3), and by fitting 3D printed houses in with these desires and drives.

ii) This 'fitting in' of 3D housing (with desire/to the body, and that involves factors such as thermal comfort) necessarily includes the bespoke design and integration of 3D printed houses with sustainable-oriented innovation (SOI), that must be shared communally, and not part of an addon scheme at the expense of the individual householder (as this is an ineffective neoliberal model to combat climate change). The model of housing that best fits in with this scheme to help with climate change is co-housing or intentional housing (Beck, 40-64). This idea started in Denmark in the late 1960s (Beck, 40) and involves a group of private houses (which in this case will be 3D printed houses), gathered around public amenities, e.g., usage of renewable energy sources such as Photovoltaic (PV) arrays, water treatment, rain water harvest, waste recycling and composting, communal gardens for food growth, communal shade plants/sun cover as passive design and social integration, a Buildings Management System (BMS), that would be centrally organized for all buildings in the co-housing development,

Electric Vehicle (EV) charging stations, an energy-efficient Heating, Ventilation and Air Conditioning (HVAC) system and Phase Change Materials, Thermal Energy Storage (TES), i.e., phase change material (PCM TES) (Baghi et al., 1-24), which would regulate the use of energy in the co-housing complex and in effect produce a microgrid (Kakigano et al., 1-8). In sum, the desires and human bodies are motivated to buy into the housing complex as the houses are privately owned and separate. However, the overall complex is set to be net zero (McCarthy et al. 8-10), as the energy and emissions are regulated centrally as part of the microgrid (Figure1).

iii) It is possible to create 3D printed houses that made from the very earth on which the residents will live (Cole and Baghi, 2022a 22-23), thus activating a sense of place and connection with the land on which the houses are built. Further, the houses may be designed to replicate natural, organic structures, such as the conical shapes of wasp capsules (Cole and Baghi, 2022b 536-539). Thus, the human house can be reinvented as an animal house, and the sense of living an unnatural life, disconnected from natural forms and matter may be potentially reduced. This aspect of living in 3D printed houses is connected and related to recent theoretical and practical work in the humanities and elsewhere that has articulated posthuman and new materialist modes of becoming as being fundamental to destabilizing the human as an exclusionary and exceptional category that dominates nature (Mellström and Pease, 22, 107).

iv) The Computer Aided Design (CAD) of 3D printed housing whilst augmenting the bespoke and individual nature of the houses, and presenting new possibilities for natural design, also helps with the aim connected to climate change of minimizing the embodied carbon of the build (Tay et al., 261-276). Traditional construction collects all elements of a house from various locations and uses variant manufacturing techniques to make the multiple pieces of a house, before fitting them together on site. Every separate manufacturing technique, plus the transport of the different elements of the house to the site, produces carbon emissions. Thus, the use of 3D printing, which is an additive manufacturing method, in the case of houses by using large scale jet printers with crane rigging (Lipson and Kurman, 56, 210), streamlines

the construction process, and makes it more efficient, safer, saving time, energy and decreasing the amount of embodied carbon involved with making the house. In sum, the use of 3D printed houses in construction would considerably help with environmental and climate concerns, as the embodied carbon in the manufacturing, waste and transport processes are reduced, whilst the widespread uptake of 3D printed houses, which is being advocated for here, would also produce redundancy in some trades, as the number of specialists required for making a house would be reduced.

v) Lastly, the insertion of 3D houses as a process into the construction industry, whilst saving in terms of environmental costs, would also help to produce low-cost housing options (Wu, Wang, and Wang, 21-31). Once the startup cost of the 3D printer, crane and rigging has been finalized, the reduction of the number of separate house components makes the build cheaper as well as quicker, thus saving on labor cost with enhanced automation. In effect, the use of 3D printing in the context of housing helps to produce potentially high-quality housing options at low costs, and thus opens the market to first time home buyers, and those who might be struggling to secure a mortgage (Figure1).
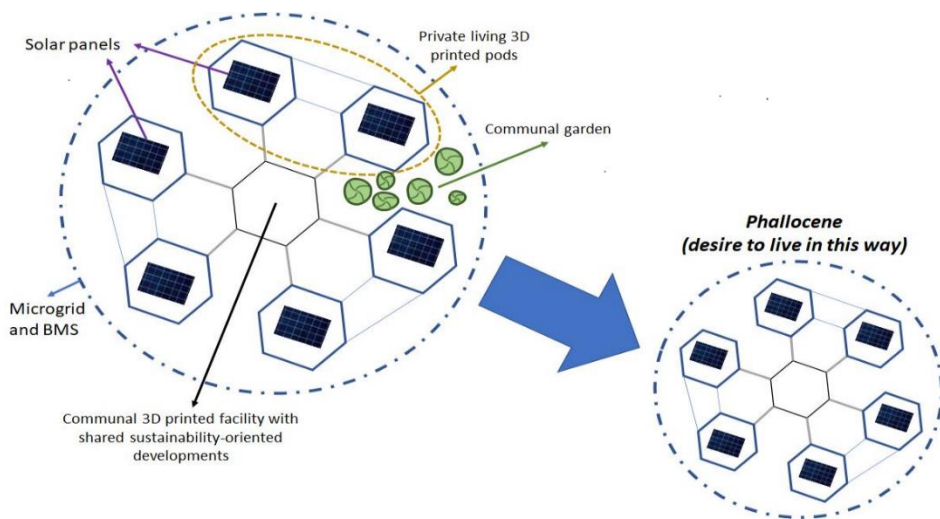


**Figure 1. 3D printed houses in the phallocene © Baghi 2023**

# 3.      Housing and affects

As argued above in section 2, and as depicted in Figure 1, the problem of anthropogenic climate change is not one of available technology. If the construction of housing was radically changed wholesale as suggested above in section 2 and Figure 1 to print 3D sustainable houses *en masse*, and in co-housing developments with shared SOIs, emissions and embodied carbon from housing construction would be substantially reduced, and the net zero target that is being espoused by governments and business might have a chance to be reached, at least with respect to new housing developments in industrialized countries (Ürge-Vorsatz et al., 227-269). Hence, the paper is framed in/as/through the phallocene, and as a question of desire, and not simply as a technological fix to the problem of climate change. The framing of the argument in the durée of the unconscious drive of the phallocene, leads to the fundamental research question of this article: *What is the nature of desire required to (re)align human dwelling with 3D printed houses?* This question integrates and synthesizes distinct levels and perceptions of human society and questions how to change them, as suggested by Gilles Deleuze (Guattari *Chaosophy,* 1995, 35-36):

> *Gilles Deleuze*: … All societies are rational and irrational at the same time. They are perforce rational in their mechanisms, their cogs and wheels, their connecting systems, and even by the place they assign to the irrational. Yet all this presupposes codes or axioms which are not the products of chance, but which are not intrinsically rational either. … Underneath all reason lies delirium, drift. Everything is rational in capitalism, except capital or capitalism itself. … **The true story is the history of desire**. A capitalist, or today's technocrat, does not desire in the same way as a slave merchant or official of the ancient Chinese empire would. [P]eople in a society desire repression, both for others and 'for themselves', [so] that there are always people who want to bug others and who have the opportunity to do so, the 'right' to do so, it is this that reveals the problem of a deep link between libidinal desire and the social domain. [It is] a 'disinterested' love for the oppressive machine: Nietzsche said … beautiful things about this permanent triumph of slaves … how the embittered, the depressed and the weak, impose their mode of life upon us all.

Currently, the desire for housing embodied by capitalism is one of deploying capital to maximize the size, grandeur, and to make the visible impression of the house achievable (Mumford, 32). In other words, the house that one might buy is seen through monetary value, both in terms of what house can be bought for what price (and/or available mortgage), and the status, societal esteem, and power that this house would endow the owner. Hence, as suggested in the quote from Deleuze above, the housing market, though entirely rational in its mechanisms and functioning (e.g., pricing/construction techniques/distribution of housing), is based on irrationalities at its base, such as the connection between having a large, impressive house, and doing well in life, or being happy. Such irrationality is augmented, relayed, and multiplied through the media, that projects and circulates images of housing that may be entirely unaffordable and/or unrealistic for most of the world's population, and, of course, have no mention of environmental matters (Alvesson, 92, 152). One way to understand this augmentation of housing matters, and how it relates to the human body and desire (the phallocene) is through affect.

The underlying theoretical perspective of this paper deploys affects beyond a personalized emotional stance or reaction to things (Cole, 2011 250-258). The concept of the phallocene is based on this approach, which can be seen, for example, in the first threshold that was passed, as the phallocene was activated in terms of the creation of a pantheon of gods, and humans moved over time from hunters and gatherers, that lived highly adaptive and nomadic lives, close to nature, foraging and hunting to survive, to building cities, with their requisite hierarchies, power structures, agriculture, regulations (laws) and sedentary functioning to keep the population in check (Weisdorf, 561-586). According to the perspective being argued for in this paper, affect circulates through these everyday activities, and the lives of the people in these cities are controlled by and through these affects, that connects to their sexualities and leads to their desires, and gives them an idea as to how to achieve freedom (i.e., not conforming to the dictates of the dominant affects/ or not simply wanting what you think you want). In other words, the free-flowing circulation of affect in the early cities, wherein the pantheon of gods was controlled by an early state system, and created a system of human life that was inculcated with a set of values and systemized by a multitude of gods, and their influence/projection of human life (Steward, 1-27). The early cities were organized around ceremonial structures that worshiped,

ritualized, and served the pantheon of gods, and the buildings of the state (e.g., palaces, government buildings, priesthood buildings) that protected and ran the pantheon. All other buildings, including the dwelling places of the population were arranged hierarchically in the city, with the most powerful having the best houses. Parallel to purely status driven, capitalist dwellings today, environmental matters were not a priority, and hence the connection between affects and housing came down to the pantheon and the power that was executed through the pantheon in terms of rank in human society (the phallocene). It is worth considering one example to clarify the relation between affects and housing, before examining how to change the situation in the contemporary situation to prioritize fitting human bodies into 3D printed houses.

Ancient Rome (753 BC-476 AD) presents a most remarkable story of a city-state that grew to encompass a tremendous Empire and evolved the innovations in technology and society that we still perceive as important today (Dunstan, 99, 101). Rome functioned as a power center, around which an entire, recognizable empire was ruled, leading to the phrase 'all roads lead to Rome.' At the heart of the Roman civilization was the pantheon of gods, and the ruling class (men) that set the laws and determined everything that happened under Roman control as far as they could (Crook, 163-164). Included in these actions was incredible and extensive infrastructure building, which is still followed today by those states that rule populations through infrastructure spending, e.g., by building roads, public amenities such as libraries and temples, sports arenas, military fortifications and utilities such as aqueducts, sewage and water systems. Further, the Roman civilization was at heart promiscuous, in that attitudes to sexual mores were more open and liberal than today, as the phallocentric control influences of one God worship and the working week were not yet apparent (Mottier, 21, 45, 106). In sum, the affects of the Roman civilization were directed outwards towards growth in terms of conquest and raising revenue through taxes and were satisfied internally where possible through the pursuit of pleasurable activities such as enhanced sexuality, coupled with a love of wine, tasty food and diverse family arrangements. The infrastructure building programs that were initiated and approved by the Senate and leaders (consuls then emperors), reflected this mixture of affects, and personified the multiple gods in superb feats of engineering. However, this city state, that once reached 5 million square kilometers and approximately 20% of the world's population, did not have a combined or coherent environmental policy, as the focus at this time was on the establishment and projection of human ego (Storey, 966-978). Hence, the affects

that are present in Roman housing represents such magnanimity, and/or status, as the hierarchy in society reflected the human bodies that resided inside them. Hence, the relationship between housing and affects demonstrates pre-Anthropocene, Holocene concerns, wherein nature, though abstracted from human society and the pantheon of gods, is thought to provide everything necessary for human flourishing. This attitude of the Roman civilization is one of a set of affects that must be reversed for human desire to want to live in 3D printed housing in co-housing arrangements.

The current situation is one of global capitalism, with its values, desires and systems driven and extended by the media (Pettman, 21-23). If we are to do anything meaningful about climate change and global warming, we must address these influences, and in the context of this essay, with respect to housing. As stated above, the drives of capitalism coalesce into the desire for bigger properties, with everything being up to date and new. However, the wall load bearing properties of 3D printed houses, makes them likely to be smaller and more compact that the average new house build in advanced technological societies (Wu, Wang and Wang, 21-31). Further, global capitalism drives consumers to want the latest in electro-domestic products, all of which can increase the energy requirements of the house, and produce a high need for electricity use, and if the grid is served by fossil fuels, will produce more global warming. Hence, this paper, which focuses on the phallocene, and climate change as a matter of desire, must address the requirement for larger houses and enhanced energy needs through consumer electronics via renewable microgrids. Firstly, the spatial requirements of house buyers should be mitigated by the suggestion that the 3D printed co-housing designs would be set in their own space to allow for and enhance the ability to grow their own food and store the communally owned sustainability-oriented innovations (SOIs) (Cole and Baghi, 2022a, 23). Secondly, the co-housing arrangement, with an integrated microgrid, would supply its own electricity from entirely renewable sources, e.g., Photovoltaic (PV) arrays, windmills, Phase Change Material, Thermal Storage Systems (PCM-TES) and accompanying battery storage (Baghi et al., 1-24). Thus, the desire for electro domestic items can be satiated, whilst the desire for space is satisfied by smaller inside spaces conjoined with communal shared spaces.

Another layer of the necessary changes connected to the switch to 3D printed houses and the phallocene are societal. Human society must want to become smaller, self-managed, independent, sustainable, slower, more cooperative, and

not adversely influenced or controlled by the general movement embodied by globalization (Cole, 2021 103-132). In sum, the societal changes necessary for this scheme to fit the human body into new 3D housing developments in co-housing arrangements are to (re)learn how to love their place, to become embroiled in situated learning, to make their lives local, vital and real (Cole and Somerville, 198-201). As previously mentioned, these societal values are connected to affect, and specifically to the questioning of affects that are broadcast, for example, through the media as normative and desirable. To change society along the lines that are being drawn here requires one to look deeply into the societal values that one holds, and how they motivate us to act and think. Changing society is necessarily challenging, and it starts with oneself, and one's inner journey, and the influences that might beset you from birth. In the context of this paper, these influences involve the type of housing that one might desire, and the living arrangements associated with these houses. Admittedly, the societal and personal changes and choices called for in this writing, and necessary to help avert dangerous climate change, are not going to happen overnight, or in any strict and/or predefined sequence. Rather, the phallocene, as has been seen above, executes phase changes, wherein a whole new milieu is ushered in, and in this milieu, society and human desires are altered (Cole, 2021 61-75). In contrast to a theorist such as Lacan (Lacan, 24-45), who theorized desire as a lack, and a source of immense error and a loss of reason, or Latour (Latour, 1-130), who theorized a conjunction between human agency and the networks around it, thus negating human desire as the primary motive force in history, this paper sets human desire above everything else as the force that must be harnessed to challenge climate change. Printing 3D houses in co-housing arrangements is one piece of the jigsaw to avert severe global warming, but, if implemented, could have the capacity to make a significant difference by lowering emissions and ushering in sustainable lifestyles.

## 4.      Conclusion(s)

This essay has been subtitled as a 'requiem to the phallocene,' because it seeks to herald a change to the potentially negative ways in which human sexual energies can be channeled and controlled. Printing 3D houses does not directly achieve that yet could help deal with climate change if implemented (Figure 1). The phallocene is a multi-levelled concept, as shown in Table 1, and the latest level is the control of our bodies, sexualities, and lives through the digital panoply of the internet. Like every other level of the phallocene, and the effects of printing and

living in 3D houses, there are multiple sides to the effects of the internet on the body, as shown by the variant research that has dealt with this area (e.g., Matwyshyn, 77-81). The linkage between printing 3D houses and living in co-housing arrangements as suggested above (Figure 1) and the multi-level concept of the phallocene is that they both attend to fundamental questions of human desire, the first with respect to our continuity as a species in the Anthropocene, the second to thresholds in history that mark out the evolution of an unconscious drive (and its effects on the body). Hence, the suggestion of printing 3D houses in the Anthropocene, as a cutting-edge technological fix to climate change, will only work if human desire is aligned in this direction, i.e., *people want to live in this manner*. This paper argues that this will only happen via attention to the phallocene, not as a lack, or a negation of human desire as part of a network, but as a fulfilment of human desire, as flourishing and as real life in the Anthropocene, wherein humans are reestablished in the natural order of things.

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