

Creating the next paradigm media essay

[Media](#)



**ASSIGN
BUSTER**

Bill Gates CREATING THE NEXT PARADIGM IN ARCHITECTURAL

DESIGN Intro This paper aims to see what the possibilities are when using public software and games as alternative methods for several stages of the architectural design process. This paper will look at the different possibilities of automating the architect's job to leave out the need for professional advice. As the research in this paper will show more software products are integrating to give a more complete package. The results will be compared to RIBA 'standards of practice' to see if the work can be legally used for construction references. In addition, to see if we can automate other professions linked to the design process? Why should an architect care for computer games? The Gaming world has become a parallel universe for a whole generation. And it is noticeable that architecture is playing an important part in it. The evidence is in the earliest manifestations. The formally simple and logically complex falling puzzle game known as "Tetris" famous to all, regardless of their knowledge of games, sequences the continuous supply of interconnecting tiles in a way as to leave an empty space forces players into a maddened paradox: although the game supports a spatial rationality based on progressive construction, what players have left on the screen is what players have failed to complete. They are facing a highly original architecture composed exclusively of misstep and mistake. Games and architectural design share some characteristics. Firstly, games possess parameters and constraints. Constraints can be found on four levels: rules, goals, spatial constraints and narrative. The main parameters are strategy and spatial movement. Other shared characteristics are the manifestation of decisions, the unknown evolution and outcome of games and design, the most efficient choice both gamers and designers have to

<https://assignbuster.com/creating-the-next-paradigm-media-essay/>

make within inefficient tools /methods, the presence of several committed parties, cheating, the use of narrative or scenarios in games and in design and a certain need in both disciplines for intuitive interfaces. Games and architectural design also seem to differ in some ways. The most important difference is the physical nature of architecture and virtual nature of games. While designing, one has to consider the consequences of each decision and one is tied to reality. Play and games are characterized by their escape from reality. Another important difference is the use and visualization of information. Architectural design requires processing of ample information. This information can be useful or irrelevant. Games only show relevant information. The past two decades, there has been a vast amount of research on the use of VR (Virtual Reality) in the design process. Since the release of America's " Army", a new kind of games sprouted: ' serious games'. Recent developments in the game industry show that contemporary gaming tends to be more physical and intuitive. Moreover, some VR-applications in academic research are being developed with game engines. Consequently, the earlier gap between games and VR seems to be bridged. Nowadays research on serious games is quite common in several disciplines, though little research has been carried out on the possible use of serious games in architectural design. Educational games have the potential to provide intrinsically motivating learning experience to the learner. Interactive narrative in educational games is recognized as a valuable support for learning as it allows collaboration of humans and computers in the creation of innovative experiences where both sides are engaged in a meaningful construction process. It also helps make sense of experience, organize knowledge, sparking problem-solving skills and increase motivation.

<https://assignbuster.com/creating-the-next-paradigm-media-essay/>

Within these environments, the rich generated stories allow a kind of unintentional learning process to occur through an engaging and appealing experience and the student is seen as an active participant in the construction of his own knowledge. Such tempting characteristics of interactive narrative suggest it as a suitable teaching medium for ill-defined domains such as design, history, inter-cultural competence and ethics. An ill-defined domain is the one exhibits one or more of the following characteristics: (a) lack consistent, unambiguous, and generalizable solutions [1], (b) defense of different decisions is based upon different criteria and it often depends on how the solver conceptualizes the situation [2], (c) cannot be described in a finite set of production rules [3] and (d) lack of defined rules that help in progressing in the solution path from the initial step to the final step [4].

Turning games into tools Since it launched 23 years ago, Sim City has been inspiring aspiring urban planners to design, build (and, if the mood so calls for it, destroy) the cities of their dreams. Sim City pushed the possibilities of games to the limits, ironically by presenting gamers a construction set with few building parts and even more limited set of outcomes. Still becoming one of the popular titles in history and pioneering the "sim" genre of computer games. Teachers having long interested in the educational value of computer games, saw Sim City as the obvious argument for how games could teach. The seemingly serious nature of the game based on urban planning looked to link objective content with encouraged engagement. It appeared as though people were paying to play while they learned and they have a lot of reason to believe so. The mechanics behind Sim City are very complex and the inspiration on the systems dynamics can be traced to two influential works. The works of Jay

<https://assignbuster.com/creating-the-next-paradigm-media-essay/>

Forrester laid the foundations for computer simulation in 1970's. Rather than simple intuitions on urban strategy that treated symptoms in the place of causes of urban decay, he supported a balanced assessment of existing circumstances and in what way they might vary with alterations in job training, new businesses and low income housing. The influence can be seen in the ratings system based on the player's performance of whether all "goods" are being supplied at levels that satisfy a computer calculated model of demand. The works of Christopher Alexander during the 60s and 70s was the next main ingredient. Alexander supported an idealistic retreat from then common "top-down modernist models" to what he termed a "universal way of design" and development, centred in the rationality of relation of the human-city. You can see his influence in the way the game allows for many configurations of the limited set of buildings designs and type. This enforces a common aesthetic on the cityscape. His works applied his theories to the basic elements of architecture, suggesting that the universal principles could be found that are applicable to everything from organisation of a whole countryside and through to the construction of a house. Inspired by Sim city have come many attempts at creating a professional, urban planning program. MetroQuest, one such software, Designed by Canadian giants Envision, allows the users to input decisions similar to those made by city planners and see how areas will transform over the next 40 years. Metro Quest teamed with the Urban Planning Department at Manchester University to research the entire north-west of England, looking at alternative developments for the region." We thought if we can just get a fraction of the excitement that people have playing Sim City - but use real information, with real data, from real cities - then we could actually mobilise a huge amount of

<https://assignbuster.com/creating-the-next-paradigm-media-essay/>

people," (Envision's co-founder Dave Biggs) MetroQuest can only go so far. It covers extensive subjects like land use, transportation and environmental policy, revealing yields like mode choice, commute times, greenhouse gas emissions and household costs. That's all it can cover without getting overwhelming." We can't assume that the entire region has the same perspective as people who come to the meetings," Dean says. " Their input must be weighed against our general knowledge, as well as what technical people want and what politicians want." (Envision's co-founder Dave Biggs) Which begs the question: What are these programs like Sim City simulating (with their levels of limitations) if not reality? Well, nothing, other than Sim City itself. Sim City demonstrates the fundamental appeal of observing and interacting with systems. Players are allowed really to test theories and construct mental models of a hidden system: that of which is the enigmatic nature of computer games and the tendency not to expose its mechanisms to the bias of its founding background. Although, there is still a potential for a Sim City type simulation in the Geographic Information Systems (GIS) market. GIS is a consequence of the development of data integration with visual representation. It mixes different sets of geographic figures on computer screens by, in effect, giving the user the ability to overlay transparencies of multiple data groups. Sim City has the same basic analysing mechanisms as GIS. Subsequently, when used to explain urban planning and politics, they communicate the structure of analysing environmental and social relations via GIS. This can be useful for a company to overlay census data to make zoning decisions based on income, class, education levels, and development appeal. Utilizing Game Elements to conceive ideas This chapter looks at what spatial qualities and features arise

<https://assignbuster.com/creating-the-next-paradigm-media-essay/>

from computer games and the effects these could have for contemporary architecture. Whilst some software programs replicate real world architectural issues others produce abstract universes in which physics can be manipulated in ways only our imagination can conceive. These programs use other mediums to influence architectural or mechanical theory.

Metaphorical linkages between architectural and musical descriptions have an ancient beginning. Vitruvius, whose writings on architecture and mechanics in *De Architectura* were profoundly influenced by musical theories. The Vitruvian view was that structures and mechanical objects such as war machines and musical instruments should be designed to conform to the ratios and proportions that constitute the natural world. The place to find those proportions identified was in Greek musical theory, which described the motion of the planets as comprising, in effect, a machine to make music.

Merging sound and space in the virtual world is "Rez." At first look Rez is indicative of early vector graphic software such as AutoCAD with its black screen. When the game begins, the screen is largely obscure except for a small humanoid figure in its lower half pulsating to rhythm of a thumping heartbeat. Slowly glowing objects emerge from the darkness and as the player targets them, they are briefly connected to a pattern until the trigger is released and they dissolve in flashes of bright colours. Simultaneously layers upon layers are added to the soundtrack, and the heartbeat slowly segues into an entrancing music track. The beauty of Rez is in the way it goes from simplicity to complexity, from the bareness of individual lines on a black screen to the richness of highly layered compositions which stay largely abstract. While the object on the screen may resemble shapes and figures we recognize they never linger long enough to disambiguate their

<https://assignbuster.com/creating-the-next-paradigm-media-essay/>

abstract meanings or values, as if they were shapes glimpsed out of the corner of the eye. Some are entirely abstract like the kaleidoscopic cubes at the start of every level. The perception of space and that of sound in Rez seem to be indistinguishable from each other as the player progresses, enabling them to explore individual layers of tracks, add sounds and watch it juxtapose effortlessly into a unified whole. The difference between time and space becomes meaningless since the game creates a surreal state in which everything courses and nothing is constant. The game consequently upturns Goethe's notion that "architecture is frozen music" because in Rez music is fluid architecture. The statement "Architecture is frozen music," exposes a universal theme of expression underlining all creative disciplines. Goethe's statement puts forward the idea that all processes of design and invention are connected by a person's desire to express something, regardless the final medium. What would a building sound like if the architect had been a composer using vibrations as the medium of expression instead of lines and shapes? You could say that an architect "paints" with building materials, the composer "constructs" using vibrations, and the scientist "composes" forms and formulas using the "modes" of math and physics. Music, is it a form of "liquid architecture?" What is revealed through games such as "REZ" is a better understanding of the rudimentary creative progression all disciplines are subject to. Even down to the very fact that we create a process through multidisciplinary collaboration reveals in itself to those involved as the actual final product. There is a strong sense of "interconnectedness" with science and art, specifically through the use of music/sound and math continually presents itself. Designing in a Parallel Dimensions

This chapter shifts to ludic construction of digital metropolises. Communities emerging in these games

<https://assignbuster.com/creating-the-next-paradigm-media-essay/>

after all, constitute not only parallel cultures and economies, but also previews of the public spaces of the future. Due to overwhelming technical progress in the entertainment industry, it seems that every new medium we have innovated has made it easier to dive into parallel worlds. The invention of video games, though, represents a new twist on this development.

Computer games have reintroduced the freedom of influence to our fictional worlds and there with amplified the degree of our immersion in them. In a way that cannot be overestimated. The idea of immersion in virtual worlds became popular and newsworthy in the early 1990's. Influenced by science fiction novels and movies at the time, additionally the first pictures of Virtual Reality (VR) helmets and gloves were shown to the public around the same time. It became clear that it was the game designers not scientists that were on the vanguard of this development contrary to the expectations that the scientist would come up with the hardware to fool people into a passive immersion that needed no contribution from its user. The online games known as virtual worlds or MMORPGs (Massively Multiplayer On-line Role Play Games) attracts millions of players across the world. In the past they have been described as games, simulations, services and media but essentially, they are virtual worlds, places. As places they have a number of place-like feature, they exist at all times, you can visit them and you can do things in them. The main difference being they are not real. They are maintained by computers and exist only in the human imagination. In real life, place is a natural consequence of space. In a virtual world this is not the case, rather space has to be represented and the way this is represented is strongly linked to how that space is shown and the closer to reality it's appearance the more constrained its representation. In 2003, the California software <https://assignbuster.com/creating-the-next-paradigm-media-essay/>

company Linden Lab opened the doors to its virtual world to the public. "Second Life" is based on a unique concept that goes much further than all other MMORPGs in that the entire content is user generated. In addition to the option of buying and selling land, there is a complex 3D modelling program. Users explore the gigantic world with a fully editable avatar whose gender and appearance can change at any time. (!) Users can pursue a wide range of interests such as roleplaying to shopping, the ultimate goal being creativity. As for the physical environment; the architecture is very surreal and eclectic. Users spend their time creating all kinds of material objects such as clothing, houses, vehicles, animations and so on. The in-game currency, " Linden Dollars", is convertible into US Dollars at any time. A woman from Germany has already made one million US dollars as a real estate agent in Second Life. Media networks and real world companies have seen the opportunity and are investing to get a foot hold in the growing market that is Second Life. In doing so the boundary between the virtual world and reality is really beginning to blur. Today the site is fast becoming a popular place for architects to road-test structures, such as Starwood's Aloft hotels, before they are built, as well as providing a space for 'limitless' creativity and inspiration, which increasingly filters back to the real world. This idea has been expanded further by Terry Beaubois an architect teaching at Montana State University but from hundreds of miles away in Northern California. He did it by creating a virtual classroom in Second Life. Beaubois has created a Second Life environment complete with his lab and four " islands" where he and his students create structures and interiors to teach and practice architectural design. Designing buildings in a virtual world brings up some interesting philosophical issues that he and other virtual

<https://assignbuster.com/creating-the-next-paradigm-media-essay/>

architects like to debate. You can argue, for example, that architectural students should only be able to design buildings that could actually be built in the real world and but he believes there is nothing wrong with taking advantage of the special features of this virtual world. In one of his students' designs there is a staircase with stairs that simply float in space - they're not anchored to the structure. And the stairs are very far apart. It would be impossible to build such a staircase in the physical world and equally impossible for a real person to use it. But in Second Life, people can fly and jump more than high, so this staircase works just fine. Residents of Second Life could even get around a tall building without a staircase. While he has no doubts about creating structures that could only exist in a virtual world, he thinks there is value in using Second Life to create structures, design furniture or create music and art that could exist in the outside world as well." It shows the potential of being able to bring real life objects into this virtual world, as well as creating objects that don't exist in real life.'" I show them pictures and they say it could only be done in Second Life, but it turns out to be the Opera House in China. It's not just limited to the real world [or] to what they know so far." Augmenting Reality

This chapter follows the migration of computer games onto the street, that is the integration of physical spaces into game systems. How is our experience of a spatial form affected when the form is used to display dynamic and rich multimedia information? Urban space such as; the shopping and entertainment areas of any human-constructed space where a subject can access information wirelessly via mobile phone, tablet or laptop. Does the form become irrelevant, reduced to functional and ultimately invisible support of for information flows? What you end up with is a new experience in which the

<https://assignbuster.com/creating-the-next-paradigm-media-essay/>

spatial and information layers are equally important. Augmented space could be defined as physical space overlaid with dynamically changing information. This information is likely to be in multi-media and is often localised for each user. At the beginning of the 21st century, there is a new agenda: physical space filled with electronic and visual information. The previous icon of the computer era, a " VR" user travelling in virtual space, has been replaced by a new image, that of a person checking their email using a tablet/smartphone at the airport, on the street or in any other actually existing space. But this is just an example of a larger trend - namely, " technological applications that dynamically deliver dynamic data to, or extract data from physical space." Video surveillance is becoming ubiquitous, cheap, tiny, wireless and internet enabled video cameras can now be placed by almost anyone anywhere. The instalment of such technology translates a physical space and its dwellers data. " Cellspace technologies" work in the opposite direction, delivering data to mobile physical-space dwellers. Some of that data may come from global networks such as the internet, some may be embedded in objects located in the space around the user. We can think of " cellspace" as the invisible layer of information that is laid over physical space and is customised by an individual user. Publicly located computer/video displays present the same visible information to passers-by. Examples in circulation at present are the " apps" for mobile devices such as the iPhone. One such app is The Museum of London's Streetmuseum app which shows users how London looked in the past with images and information from the museum's extensive collection. By holding the iPhone upto a present day London street scene, the app shows the same location as it looked in the olden days, along with historical facts about the place. The app leads you to various locations

<https://assignbuster.com/creating-the-next-paradigm-media-essay/>

around London using either the map or GPS. Once you're there, click the "3D View" button, and the app will recognize the location and overlay the historical photograph over the live video feed of the real world, giving you a brief glimpse into how the past looked. AR can aid in visualizing building projects. Computer-generated images of a structure can be superimposed into a real life local view of a property before the physical building is constructed there. AR can also be employed within an architect's work space, rendering into their view animated 3D visualizations of their 2D drawings. Most augmented reality applications rely on superimposing either 3D-generated computer imagery or some form of descriptive knowledge over the real-time images obtained through a camera, webcam or phone. This requires a good understanding of image processing and computer vision techniques, mainly for tracking either markers or the natural features on which this imagery is superimposed. Computer-generated imagery has to look realistic and be properly aligned with the real environment in order to create an authentic impression. Most of the applications are designed for the general public so a good understanding of intuitive user interfaces is also required to provide a seamless experience. Technologies that cater to augmented reality will act as 'portals' that link you to information, communities and destinations in real-time. Such advances are changing the way you experience architecture, both aesthetically and functionally. In the case of "VR" the user interacts with a virtual simulation, in the case of "AR", he interacts with actual things in actual space. Because of this a typical VR system presents a user with virtual space that has nothing to do with that user's immediate physical space. In contrast, a typical AR system adds information that is directly related to the user's immediate physical space.

<https://assignbuster.com/creating-the-next-paradigm-media-essay/>

What is the phenomenological experience of being in a new augmented space? What can be the new cultural applications of new computer and network enabled augmented spaces? What are possible poetics and aesthetics of an augmented space? One way to begin thinking about these questions is to approach the design of augmented space as an architectural problem. Augmented space provides a challenge and an opportunity for many architects to rethink their practice, since architecture will have to take into account the fact that virtual layers of contextual information will overlay the built space. But is this a completely new challenge for architecture? If we assume that the overlaying of different spaces is a conceptual problem that is not connected to any particular technology, we may start to think about which architects and artists have already been working on this problem. To put it another way, the layering of dynamic and contextual data over physical space is a particular case of a general aesthetic paradigm: how to combine different spaces together. Of course, electronically augmented space is unique - since the information is personalized for every user, it can change dynamically over time, and it is delivered through an interactive multimedia interface, etc. Yet it is crucial to see this as a conceptual rather than just a technological issue - and therefore as something that in part has already - been a part of other architectural and artistic paradigms. To ConcludeGame makers sell space. The array of available games is like an encyclopaedia of spatial systems, a detailed catalogue of architectural types. To choose a game is to choose an architecture, to pull it out of the world and perfect it by turning it into your whole world. An escape from everyday life. To be in a physical space, whether it be a house, office or beach, is simultaneously to be in a gathering of different legal, social and information

<https://assignbuster.com/creating-the-next-paradigm-media-essay/>

spaces. Picking up your smart phone and all of a sudden you are caught between different architectural worlds. The virtual world has an experience so extreme that it is experienced physically. Electronics act as a new joint between diverse spatial systems. There is no friction between heterogeneous spaces, physical and virtual. In the United states of America there are more games sold per year than the total population of the country. As the type of software demanding the most processing power, games steer the hardware industry into an unyielding cycle. Still, the input from humans is more remarkable as designers have to continuously add more channels to keep players at the boundaries of their senses. The space we use to escape in is getting bigger than the space we are escaping from. To look into a monitor is to look at a world far vaster than that any window can provide. The ever expanding space of this parallel world is not simply that of the ideal ized architectures shown on the monitors, but the space defined by our senses. A key to the architecture of the virtual world is like that of any other architecture we experience, the entrance and exit." Games don't begin by asking, ' are you sure you want to exit your environment?' We are sure"

Mark Wigley