Architecture

From Wikipedia, the free encyclopedia

Architecture (Latin *architectura*, from the Greek ἀρχιτέκτων – arkhitekton, from ἀρχ- "chief" and τέκτων "builder, carpenter, mason") is both the process and product of planning, designing and construction. Architectural works, in the material form of buildings, are often perceived as cultural and political symbols and as works of art. Historical civilizations are often identified with their surviving architectural achievements.

"Architecture" can mean:

- The art and science of design and erecting buildings and other physical structures.
- A general term to describe buildings and other infrastructures.
- A style and method of design and construction of buildings and other physical structures.
- The practice of an architect, where architecture means to offer or render professional services in connection with the design and construction of a building, or group of buildings and the space within the site surrounding the buildings, that have as their principal purpose human occupancy or use. [1]
- Design activity, from the macro-level (urban design, landscape architecture) to the micro-level (construction details and furniture).
- The term "architecture" has been adopted to describe the activity of designing any kind of system, and is commonly used in describing information technology.

In relation to buildings, architecture has to do with the planning, designing and constructing form, space and ambience that reflect functional, technical, social, environmental, and aesthetic considerations. It requires the creative manipulation and coordination of material, technology, light and shadow. Architecture also encompasses the pragmatic aspects of realizing buildings and structures, including scheduling, cost estimating and construction administration. As documentation produced by architects, typically drawings, plans and technical specifications, architecture defines the structure and/or behavior of a building or any other kind of system that is to be or has been constructed.

Theory of architecture

Historic treatises

The earliest surviving written work on the subject of architecture is *De architectura*, by the Roman architect Vitruvius in the early 1st century CE. [3] According to Vitruvius, a good building should satisfy the three principles of firmitas, utilitas, venustas, [4][5] which translate roughly as –

- Durability – it should stand up robustly and remain in good condition.
- Utility – it should be useful and function well for the people using it
- Beauty – it should delight people and raise their spirits.
According to Vitruvius, the architect should strive to fulfill each of these three attributes as well as possible. Leone Battista Alberti, who elaborates on the ideas of Vitruvius in his treatise, De Re Aedificatoria, saw beauty primarily as a matter of proportion, although ornament also played a part. For Alberti, the rules of proportion were those that governed the idealised human figure, the Golden mean. The most important aspect of beauty was therefore an inherent part of an object, rather than something applied superficially; and was based on universal, recognisable truths. The notion of style in the arts was not developed until the 16th century, with the writing of Vasari. The treatises, by the 18th century, had been translated into Italian, French, Spanish and English.

In the early nineteenth century, Augustus Welby Northmore Pugin wrote Contrasts (1836) that, as the titled suggested, contrasted the modern, industrial world, which he disparaged, with an idealized image of neo-medieval world. Gothic architecture, Pugin believed, was the only “true Christian form of architecture.”

The 19th century English art critic, John Ruskin, in his Seven Lamps of Architecture, published 1849, was much narrower in his view of what constituted architecture. Architecture was the "art which so disposes and adorns the edifices raised by men ... that the sight of them" contributes "to his mental health, power, and pleasure".

For Ruskin, the aesthetic was of overriding significance. His work goes on to state that a building is not truly a work of architecture unless it is in some way "adorned". For Ruskin, a well-constructed, well-proportioned, functional building needed string courses or rustication, at the very least.

On the difference between the ideals of "architecture" and mere "construction", the renowned 20th C. architect Le Corbusier wrote: "You employ stone, wood, and concrete, and with these materials you build houses and palaces: that is construction. Ingenuity is at work. But suddenly you touch my heart, you do me good. I am happy and I say: This is beautiful. That is Architecture".

By contrast, the le Corbusier's contemporary, Ludwig Mies van der Rohe said that architecture begins "when 2 bricks are put together."

**Modern concepts of architecture**

The great 19th century architect of skyscrapers, Louis Sullivan, promoted an overriding precept to architectural design: "Form follows function".

While the notion that structural and aesthetic considerations should be entirely subject to functionality was met with both popularity and skepticism, it had the effect of introducing the concept of "function" in place of Vitruvius' "utility". "Function" came to be seen as encompassing all criteria of the use, perception and enjoyment of a building, not only practical but also aesthetic, psychological and cultural.
Nunzia Rondanini stated, "Through its aesthetic dimension architecture goes beyond the functional aspects that it has in common with other human sciences. Through its own particular way of expressing values, architecture can stimulate and influence social life without presuming that, in and of itself, it will promote social development.'

To restrict the meaning of (architectural) formalism to art for art's sake is not only reactionary; it can also be a purposeless quest for perfection or originality which degrades form into a mere instrumentality". [9]

Among the philosophies that have influenced modern architects and their approach to building design are rationalism, empiricism, structuralism, poststructuralism, and phenomenology.

In the late 20th century a new concept was added to those included in the compass of both structure and function, the consideration of sustainability. To satisfy the contemporary ethos a building should be constructed in a manner which is environmentally friendly in terms of the production of its materials, its impact upon the natural and built environment of its surrounding area and the demands that it makes upon non-sustainable power sources for heating, cooling, water and waste management and lighting.

**History**

**Origins and vernacular architecture**

Building first evolved out of the dynamics between needs (shelter, security, worship, etc.) and means (available building materials and attendant skills). As human cultures developed and knowledge began to be formalized through oral traditions and practices, building became a craft, and "architecture" is the name given to the most highly formalized and respected versions of that craft.

It is widely assumed that architectural success was the product of a process of trial and error, with progressively less trial and more replication as the results of the process proved increasingly satisfactory. What is termed vernacular architecture continues to be produced in many parts of the world. Indeed, vernacular buildings make up most of the built world that people experience every day. Early human settlements were mostly rural. Due to a surplus in production the economy began to expand resulting in urbanization thus creating urban areas which grew and evolved very rapidly in some cases, such as that of Catal Höyük in Anatolia and Mohenjo Daro of the Indus Valley Civilization in modern-day Pakistan.

**Ancient architecture**

In many ancient civilizations, such as that of Egypt and Mesopotamia, architecture and urbanism reflected the constant engagement with the divine and the supernatural, and many ancient cultures resorted to monumentality in architecture to represent symbolically the political power of the ruler, the ruling elite, or the state itself.
The architecture and urbanism of the Classical civilizations such as the Greek and the Roman evolved from civic ideals rather than religious or empirical ones and new building types emerged. Architectural styles developed.

Texts on architecture have been written since ancient time. These texts provided both general advice and specific formal prescriptions or canons. Some examples of canons are found in the writings of the 1st-century BCE Roman military engineer Vitruvius, the Kao Gong Ji of ancient China and Vaastu Shastra of ancient India and Manjusri Vasthu Vidya Sastra of Sri Lanka. Some of the most important early examples of canonic architecture are religious.

**Asian architecture**

The architecture of different parts of Asia developed along different lines from that of Europe; Buddhist, Hindu and Sikh architecture each having different characteristics. Buddhist architecture, in particular, showed great regional diversity. In many Asian countries a pantheistic religion led to architectural forms that were designed specifically to enhance the natural landscape.

**Islamic architecture**

Islamic architecture began in the 7th century CE, incorporating a blend of architectural forms from the ancient Middle East and Byzantium, but also developing features to suit the religious and social needs of the society. Examples can be found throughout the Middle East, North Africa, Spain and the Indian Sub-continent. The widespread application of the pointed arch was to influence European architecture of the Medieval period.

**The medieval builder**

In Europe, in both the Classical and Medieval periods, buildings were not often attributed to specific individuals and the names of architects remain frequently unknown, despite the vast scale of the many religious buildings extant from this period.

During the Medieval period guilds were formed by craftsmen to organize their trade and written contracts have survived, particularly in relation to ecclesiastical buildings. The role of architect was usually one with that of master mason, or Magister lathomorum as they are sometimes described in contemporary documents.

**Renaissance and the architect**

With the Renaissance and its emphasis on the individual and humanity rather than religion, and with all its attendant progress and achievements, a new chapter began. Buildings were ascribed to specific architects – Brunelleschi, Alberti, Michelangelo, Palladio – and the cult of the individual had begun.

There was still no dividing line between artist, architect and engineer, or any of the related vocations, and the appellation was often one of regional preference. At this stage, it was still
possible for an artist to design a bridge as the level of structural calculations involved was within the scope of the generalist.

**Early modern and the industrial age**

With the emerging knowledge in scientific fields and the rise of new materials and technology, architecture and engineering began to separate, and the architect began to concentrate on aesthetics and the humanist aspects, often at the expense of technical aspects of building design. There was also the rise of the "gentleman architect" who usually dealt with wealthy clients and concentrated predominantly on visual qualities derived usually from historical prototypes, typified by the many country houses of Great Britain that were created in the Neo Gothic or Scottish Baronial styles. Formal architectural training in the 19th century, for example at Ecole des Beaux Arts in France, gave much emphasis to the production of beautiful drawings and little to context and feasibility. Effective architects generally received their training in the offices of other architects, graduating to the role from draughtsmen or clerks.

Meanwhile, the Industrial Revolution laid open the door for mass production and consumption. Aesthetics became a criterion for the middle class as ornamented products, once within the province of expensive craftsmanship, became cheaper under machine production.

Vernacular architecture became increasingly ornamental. House builders could use current architectural design in their work by combining features found in pattern books and architectural journals.

**Modernism and reaction of architecture**

Around the turn of the 20th century, a general dissatisfaction with the emphasis on revivalist architecture and elaborate decoration gave rise to many new lines of thought that served as precursors to Modern Architecture. Notable among these is the Deutscher Werkbund, formed in 1907 to produce better quality machine made objects. The rise of the profession of industrial design is usually placed here. Following this lead, the Bauhaus school, founded in Weimar, Germany in 1919, redefined the architectural bounds prior set throughout history, viewing the creation of a building as the ultimate synthesis—the apex—of art, craft, and technology.

When Modern architecture was first practiced, it was an avant-garde movement with moral, philosophical, and aesthetic underpinnings. Immediately after World War I, pioneering modernist architects sought to develop a completely new style appropriate for a new post-war social and economic order, focused on meeting the needs of the middle and working classes. They rejected the architectural practice of the academic refinement of historical styles which served the rapidly declining aristocratic order. The approach of the Modernist architects was to reduce buildings to pure forms, removing historical references and ornament in favor of functionalist details. Buildings displayed their functional and structural elements, exposing steel beams and concrete surfaces instead of hiding them behind decorative forms.
Architects such as Frank Lloyd Wright developed Organic architecture in which the form was defined by its environment and purpose, with an aim to promote harmony between human habitation and the natural world with prime examples being Robie House and Falling Water.

Architects such as Mies van der Rohe, Philip Johnson and Marcel Breuer worked to create beauty based on the inherent qualities of building materials and modern construction techniques, trading traditional historic forms for simplified geometric forms, celebrating the new means and methods made possible by the Industrial Revolution, including steel-frame construction, which gave birth to high-rise superstructures. By mid-century, Modernism had morphed into the International Style, an aesthetic epitomized in many ways by the Twin Towers of New York's World Trade Center.

Many architects resisted Modernism, finding it devoid of the decorative richness of ornamented styles and as the founders of that movement lost influence in the late 1970s, Postmodernism developed as a reaction against its austerity. Postmodernism viewed Modernism as being too extreme and even harsh in regards to design. Instead, Postmodernists combined Modernism with older styles from before the 1900's to form a middle ground. Robert Venturi's contention that a "decorated shed" (an ordinary building which is functionally designed inside and embellished on the outside) was better than a "duck" (an ungainly building in which the whole form and its function are tied together) gives an idea of these approaches.

**Architecture today**

Part of the architectural profession, and also some non-architects, responded to Modernism and Postmodernism by going to what they considered the root of the problem. They felt that architecture was not a personal philosophical or aesthetic pursuit by individualists; rather it had to consider everyday needs of people and use technology to give a livable environment.

The Design Methodology Movement involving people such as Christopher Alexander started searching for more people-oriented designs. Extensive studies on areas such as behavioral, environmental, and social sciences were done and started informing the design process. As the complexity of buildings began to increase (in terms of structural systems, services, energy and technologies), architecture started becoming more multi-disciplinary. Architecture today usually requires a team of specialist professionals, with the architect being one of many, although usually the team leader.

From the 1980s and into the new millennium, the field of architecture saw the rise of specializations for each project type, technological expertise or project delivery methods. In addition, there has been an increased separation of the 'design' architect from the 'project' architect. The main reason for the shift is because architectural processes for any large building have become increasingly complicated, involving preliminary studies of such matters as durability, sustainability, quality, money, and compliance with local laws. A large structure can no longer be the design of one person but must be the work of many.

Environmental sustainability has become a mainstream issue, with profound affect on the architectural profession. Within the past several decades, architects have realized that buildings
must take into account their effect upon the environment. Major examples of this can be found in greener roof designs, biodegradable materials, and more attention to a structure's energy usage. This major shift in architecture has also changed architecture schools to focus more the environment. Sustainability in architecture was pioneered in the 1960s by architects such as Buckminster Fuller, Frank Lloyd Wright, Sim Van der Ryn, in the 1970s Ian McHarg in the US and Brenda and Robert Vale in the UK and New Zealand. There has been an acceleration in the number of buildings which seek to meet green building sustainable design principles. Sustainable practices that were at the core of vernacular architecture increasingly provide inspiration for environmentally and socially sustainable contemporary techniques. The U.S. Green Building Council's LEED (Leadership in Energy and Environmental Design) rating system has been instrumental in this. An example of an architecturally innovative green building is the Dynamic Tower which will be powered by wind turbines and solar panels.
Autodesk

From Wikipedia, the free encyclopedia

Autodesk, Inc. (NASDAQ: ADSK) is an American multinational corporation that focuses on 3D[2] design software for use in architecture, engineering and building construction, manufacturing, and media and entertainment. Autodesk was founded in 1982 by John Walker, a coauthor of early versions of the company's flagship CAD software product AutoCAD, and 12 others.[3] It is headquartered in San Rafael, California.

Autodesk became best known for its flagship computer-aided design software AutoCAD. In addition to AutoCAD, Autodesk develops digital prototyping solutions[4] to visualize, simulate, and analyze real-world performance using a digital model during the design process. The company also develops Building Information Modeling software to generate and manage building data using a three-dimensional building model. Autodesk also provides digital media creation and management software from film and television visual effects, color grading, and editing to animation, game development, and design visualization.[5]

Products and solutions

Platform solutions and emerging business (PSEB)

The Platform Solutions and Emerging Business division develops and manages the product foundation for most Autodesk offerings across multiple markets, including Autodesk's flagship product, AutoCAD, AutoCAD LT, AutoCAD WS, Autodesk's Geospatial solutions (AutoCAD Map3D, AutoCAD MapGuide Enterprise, etc.), Plant solutions (AutoCAD P&ID, AutoCAD Plant 3D), Autodesk Impression, Extended Design offerings such as Design Review, Autodesk Content Network (Autodesk Seek web service), Autodesk Labs, and Global Engineering.

Architecture, engineering and construction (AEC)

Autodesk's architecture, engineering, and construction solutions include AutoCAD-based design and documentation software such as AutoCAD Architecture (Old name – Architectural Desktop), AutoCAD MEP (Old name -Autodesk Building Systems)), and AutoCAD Civil 3D, as well as advanced technology for relational building modeling such as Revit Architecture (Old name – Revit Building), Revit Structure, and Revit MEP (Old name – Revit Systems). The AEC division also develops and manages the collaborative project management (CPM) or extranet solutions, Buzzsaw and Constructware, the NavisWorks software tools (acquired 2007), and analysis tools for sustainable design including Autodesk Green Building Studio and Autodesk Ecotect.

Manufacturing

Autodesk's manufacturing solutions are used in various manufacturing segments, including industrial machinery, electro-mechanical, tool and die, industrial equipment, automotive

Media and entertainment

Autodesk’s media and entertainment solutions are designed for digital media creation, management, and delivery across all disciplines, from film and television visual effects, color grading, and editing to animation, game development, and design visualization. Autodesk’s Media and Entertainment Division is based in Montreal, Quebec. It was established in 1999 after Autodesk, Inc. acquired Discreet Logic, Inc. and merged its operations with Kinetix. In January 2006, Autodesk acquired Alias, a developer of 3D graphics technology. In October 2008, Autodesk acquired the Softimage brand from Avid.

The principal product offerings from the Media and Entertainment Division are Maya, Softimage, 3ds Max, Mudbox, Inferno, Flame, Discreet Flint, Discreet Smoke, Lustre, ImageModeler and Stitcher. These products have won Academy Awards for Best Visual Effects for 16 consecutive years. [6]

History

Autodesk's first notable product was AutoCAD, a CAD application designed to run on the systems known as "microcomputers" at the time, including those running the 8-bit CP/M operating system and two of the new 16-bit systems, the Victor 9000 and the IBM Personal Computer (PC). This CAD tool allowed users to create detailed technical drawings, and was affordable to many smaller design, engineering, and architecture companies.

Release 2.1 of AutoCAD, released in 1986, included AutoLISP, a built-in Lisp interpreter initially based on XLISP.[7] This opened the door for third party developers to extend AutoCAD's functionality, to address a wide range of vertical markets, strengthening AutoCAD's market penetration.

Subsequent to AutoCAD Release 12, the company stopped supporting the Unix environment and the Apple Macintosh platform. After AutoCAD Release 14, first shipped in 1997, Autodesk discontinued development under MS-DOS, and focused exclusively on Microsoft Windows.

AutoCAD has grown to become the most widely used CAD program for 2D non-specialized applications.[8] The native file formats written by AutoCAD, DXF and DWG, are also widely used for CAD data interoperability.

In the 1990s, with the purchase of Softdesk in 1997, Autodesk started to develop specialty versions of AutoCAD, targeted to broad industry segments, including architecture, civil engineering, and manufacturing. Since the late 1990s, the company has added a number of significant non-AutoCAD-based products, including Revit, a parametric building modeling application (acquired in 2002, from Massachusetts-based Revit Technologies for $133 million), and Inventor, an internally developed parametric mechanical design CAD application.
In October 2010, Autodesk released AutoCAD for Mac.[13]

Revit

From Wikipedia, the free encyclopedia

Autodesk Revit Architecture often referred to as simply Revit is a Building Information Modeling software developed by Autodesk. It allows the user to design with both parametric 3D modeling and 2D drafting elements. Building Information Modeling is a Computer Aided Design (CAD) paradigm that employs intelligent 3D objects to represent real physical building components such as walls and doors.

In addition, Revit's database for a project can contain information about a project at various stages in the building's lifecycle, from concept to construction to decommissioning. This is sometimes called 4D CAD where time is the fourth dimension.

Autodesk purchased the Massachusetts-based Revit Technology Corporation for US$133 million in 2002.[1]

The latest released version is Revit Architecture/Structure/MEP 2012 (March, 2011)[2] and the corresponding AutoCAD Revit Suite 2012 products. (AutoCAD Revit Suite combines a seat of AutoCAD with a seat of Revit on a given workstation for a slightly higher price than Revit alone.) On September 29, 2008, Autodesk released 64-bit versions of Revit 2009 products for subscription customers. Both 32-bit and 64-bit versions of Revit 2010 and 2011 products are available without subscription in the standard installation. Revit is localized into multiple languages, including German, French, Italian, Spanish, Czech, Polish, Hungarian and Russian.

Product lineup

Since purchasing Revit, Autodesk has developed three versions of Revit for the varying building design disciplines:

- **Revit Architecture**, for architects and building designers (formerly Revit Building). The AutoCAD Revit Architecture Suite includes Revit Architecture, AutoCAD, and AutoCAD Architecture. An AutoCAD Revit Architecture Visualization Suite also adds 3ds Max Design and Navisworks Review, and is available only in the following countries; Singapore, the United States of America, Australia, New Zealand and Canada.
- **Revit MEP**, for mechanical, electrical and plumbing engineers (formerly Revit Systems). The Revit MEP Suite includes Revit MEP, AutoCAD, and AutoCAD MEP.

How it works
Revit uses .RVT files for storing BIM models. Typically, a building is made using 3D objects to create walls, floors, roofs, structure, windows, doors and other objects as needed. These parametric objects — 3D building objects (such as windows or doors) or 2D drafting objects (such as surface patterns) — are called "families" and are saved in .RFA files, and imported into the RVT database as needed.

A Revit model is a single database file represented in the various ways which are useful for design work. Such representations can be plans, sections, elevations, legends, and schedules. Because changes to each representation of the database model are made to one central model, changes made in one representation of the model (for example a plan) are propagated to other representations of the model (for example elevations). Thus, Revit drawings and schedules are always fully coordinated in terms of the building objects shown in drawings.

When a project database is shared, a central file is created which stores the master copy of the project database on a file server on the office's LAN. Each user works on a copy of the central file (known as the local file), stored on the user's workstation. Users then save to the central file to update the central file with their changes and to receive changes from other users. Revit checks with the central file whenever a user starts working on an object in the database to see if another user is editing the object. This procedure prevents two users from making the same change simultaneously and prevents conflicts.

Multiple disciplines working together on the same project make their own project databases and link in the other consultants’ databases for verification. Revit can perform collision checking, which detects if different components of the building are occupying the same physical space. Revit is one of many BIM-software which supports open XML-based IFC standard, developed by buildingSMART organization. This filetype makes it possible for a client or general contractor to require BIM-based workflow from the different discipline consultants of a building project. Because IFC is non-proprietary format it is archivable and compatible with other databases, such as facility management software.

**Modeling**

Revit uses a similar work environment to Inventor to create its 3D models, allowing users to extrude, revolve, trace the path of, or morph shapes drawn on a 3D plane in order to make them into 3D objects, as well as do these actions to already made solid objects to cut or reform them. However, Revit lacks the ability to allow the user to manipulate the object's individual polygons.

As simple or primitive as this may seem, an experienced user can create realistic and accurate models of objects, as well as import premade models from other programs. This also ensures that the generative components of an object are retained so they can be parametrically controlled. Revit families can be created with dimensions controlled by parameters (parametric). This allows users to modify the component by changing predefined values such as height and width.

**History of Revit**
In 1997, Charles River Software was founded by Irwin Jungreis and Leonid Raiz, the core software development team for ProEngineer. The first round of venture capital was in 1998 and the first office was located in Wellesley, MA (upstairs from Domino's Pizza!). They started the company to solve what they thought was an absence of a parametric modelling platform for architecture. The management team and boards of directors were CAD industry veterans with years of experience with innovative software technology. Their flagship product, Revit, incorporated the same 3D concepts as Pro/E but focused around the model concept.

In 2000 the company was renamed Revit Technology Corporation and on April 5, 2000 in Cambridge, MA the first version of Revit (1.0) was released. First offered as a software lease (you could not buy it), Revit was the first parametric building modeler specifically designed for the AEC industry. It's technology offered the model concept with an easy-to-use platform designed to enable architects, engineers and contractors life-cycle planning for building projects. Revit's intelligent design environment encouraged design revisions because there was real-time synchronization of the documentation.

On February 21, 2002, Autodesk (the maker of AutoCad) announced plans to acquire Revit Technology Corporation. The acquisition meant more research, development and improvement of the software. Autodesk has released several versions of Revit since 2004 and since they no longer used the lease model, it meant that Revit could be offered for a more affordable price. Since the release of Revit Architecture 2009, it has become the BIM standard in the AEC industry.

### Intended use

Revit is intended to be a major component in Building Information Modeling. A main function of Revit is to eliminate redundancies such as having multiple models across industries. Currently, architects, consultants, general contractors, and manufacturers all create their own models and databases from information handed down in a chain of command. BIM intends to replace this approach with a more centralized one. Revit models created in different disciplines (Architectural, Structural, and Mechanical) can be linked and/or combined into one model. This allows a single model and associated database to be kept, ensuring that all parties have the latest information and that there are no errors in translation. Revit also utilizes its rendering engine to remove the interpretation from complex geometries, allowing more intricate designs to be made and understood.

### Family based content

Revit uses the term 'family' to describe a discrete definition of a part of the building model. There are many Categories of Families, but three main types: System, Component and In-Place Families. Where other programs may use terms such as 'block' or 'insert', Revit uses the term 'Family'.

A hierarchical system is used, where a Family tells Revit how to make something, a Type (of a Family) forces certain parameters to be applied, and an Element (or Instance) (of a Type) is the
actual part of the building model. For example, a Swing Door may be the name of a Family. It may have Types describing different sizes, and the actual building model will have instances of those types placed in Walls.

**Rendering**

When a user makes a building, room, model, or any other kind of object in Revit, she or he may use Revit's rendering engine to make a more realistic image of what is otherwise a very diagrammatic model. This is accomplished by either using the premade model, wall, floor, etc., tools, or making her or his own models, walls, materials, etc.. The wall- and model- making process is simple enough to pick up in a day or so. Revit 2010 comes with a plethora of premade materials, each of which can be modified to the user's desires. The user can also begin with a "Generic" material, which can be customized to a level of detail not offered by many 3D modeling programs. With this, the user can set the rotation, size, brightness, and intensity of textures, gloss maps (also known as shinemaps), transparency maps, reflection maps, oblique reflection maps, hole maps, and bump maps, as well as leaving the map part out and just using the sliders for any one (or all or none) of the aforementioned features of textures.

Cloud-based rendering with the experimental plug-in dubbed Project Neon, located on Autodesk Labs is in the beta phases and allows for the user to render their images through their Autodesk account instead of locally through their own computers.
# Architectural CADD Assignments

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Dream House Project
Architectural CADD

First I suggest you do some research and jot down ideas and simple hand drawn sketches of things you like. Use the following websites to research architectural styles and ideas for floor plans:
http://www.houseplans.com/
http://www.thehousedesigners.com/
http://www.architecturalhouseplans.com/
http://www.coolhouseplans.com/
http://www.architecturaldesigns.com/
http://www.theplancollection.com/
http://www.thehousedesigners.com/architectural_floor_plans.asp

When you feel that you have done a sufficient amount of research you may begin your project. The project itself has two parts; a paper and a set of CADD plans.

First your paper has to be one page, double spaced, 12 pt. Times New Roman Font, with one inch margins all around. In the paper you should describe to me what your house is going to look like and how it will be laid out. Include things like the architectural style, you are using, the number of bedrooms, bathrooms, floors, garage stalls, type of floor coverings, etc. The paper will be worth 25 points and is due before you begin designing your dream house and before Midquarter.

Next you have to create a dream house in Chief Architect. The house is for a family of four, and should have between two and three thousand square feet of living space. It should be furnished with floor coverings, appliances, and cabinets but nothing else. It should look as you described it in the paper. When you are done you must print out a complete set of 2-D architectural plans, and at least two isometric views of the exterior and interior. The plans and views will be worth 50 points. I will be looking for a house that is both attractive and has a functional floor plan. The plans are due at the end of the quarter.
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<td>______</td>
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<td>Bathroom Fixtures</td>
<td>5pts.</td>
<td>______</td>
</tr>
<tr>
<td>Utility Room Fixtures</td>
<td>5pts.</td>
<td>______</td>
</tr>
<tr>
<td>Landscaping</td>
<td>2.5pts.</td>
<td>______</td>
</tr>
<tr>
<td>Electrical</td>
<td>2.5pts.</td>
<td>______</td>
</tr>
</tbody>
</table>

Name: ___________________