МИНИСТЕРСТВО ОБРАЗОВАНИЯ И НАУКИ РОССИЙСКОЙ ФЕДЕРАЦИИ
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Федеральное государственное бюджетное образовательное учреждение
высшего профессионального образования
«Пензенский государственный университет
архитектуры и строительства»
(ПГУАС)

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ИНОСТРАННЫЙ ЯЗЫК.
АНГЛИЙСКИЙ ЯЗЫК ДЛЯ БУДУЩИХ ПРОФЕССИОНАЛОВ СТРОИТЕЛЬНОЙ ОТРАСЛИ

Рекомендовано Редсоветом университета
в качестве пособия по английскому языку
для студентов, обучающихся по направлению
08.03.01 «Строительство»

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Пособие содержит аутентичные тексты на английском языке по направлениям подготовки 08.03.01 «Строительство». Даны задания для проверки понимания содержания текстов.

Пособие подготовлено на кафедре иностранных языков и предназначено для студентов, обучающихся по направлению 08.03.01 «Строительство».

ПРЕДИСЛОВИЕ

В пособие включены тексты, взятые из английских и американских источников. Они содержат информацию по направлению подготовки студентов ПГУАС 08.03.01 «Строительство». К текстам имеются задания для контроля понимания прочитанного материала. Учебное пособие рекомендуется для использования при аудиторной работе со студентами. Предназначено для проверки навыков аннотирования и реферирования.

Данное пособие предусматривает контроль усвоения общекультурных компетенций (ОК-5), т.е. реализацию способности к коммуникации в устной и письменной формах на русском и иностранном языках для решения задач межличностного и межкультурного взаимодействия.

На основе реализации данных компетенций студент должен:

- знать базовую лексику, представляющую нейтральный научный стиль, а также основную терминологию своей специальности;
- уметь читать и понимать со словарем литературу по профилю подготовки;
- владеть основными навыками письма для ведения профессиональной переписки;
- владеть основами публичной речи;
- делать сообщения, доклады.

Часть I. СТРОИТЕЛЬСТВО

Текст 1

1. Прочитайте и переведите текст на русский язык.
2. Составьте план текста.
3. Перескажите текст на английском языке.

Construction

In the fields of architecture and civil engineering, construction is a process that consists of the building or assembling of infrastructure. Far from being a single activity, large scale construction is a feat of human multitasking. Normally, the job is managed by a project manager, and supervised by a construction manager, design engineer, construction engineer or project architect.

For the successful execution of a project, effective planning is essential. Those involved with the design and execution of the infrastructure in question must consider the environmental impact of the job, the successful scheduling, budgeting, construction site safety, availability of building materials, logistics, inconvenience to the public caused by construction delays and bidding, etc.

Types of construction projects

Condo construction in Canada
In general, there are four types of construction:
Residential Building construction
Industrial construction
Commercial Building construction
Heavy Civil construction

Each type of construction project requires a unique team to plan, design, construct and maintain the project.

Building construction

Building construction is the process of adding structure to real property or construction of buildings. The vast majority of building construction jobs are small renovations, such as addition of a room, or renovation of a bathroom. Often, the owner of the property acts as laborer, paymaster, and design team for the entire project. However, all building construction projects include some elements in common – design, financial, estimating and legal considerations. Many projects of varying sizes reach undesirable end results, such as structural collapse, cost overruns, and/or litigation. For this reason, those with experience in the field make detailed plans and maintain careful oversight during the project to ensure a positive outcome.

Commercial building construction is procured privately or publicly utilizing various delivery methodologies, including cost estimating, hard bid, negotiated

price, traditional, management contracting, construction management-at-risk, design & build and design-build bridging.

Residential construction practices, technologies, and resources must conform to local building authority regulations and codes of practice. Materials readily available in the area generally dictate the construction materials used (e.g. brick versus stone, versus timber). Cost of construction on a per square meter (or per square foot) basis for houses can vary dramatically based on site conditions, local regulations, economies of scale (custom designed homes are always more expensive to build) and the availability of skilled tradespeople. As residential construction (as well as all other types of construction) can generate a lot of waste, careful planning again is needed here.

The most popular method of residential construction in the United States is wood framed construction. As efficiency codes have come into effect in recent years, new construction technologies and methods have emerged. University Construction Management departments are on the cutting edge of the newest methods of construction intended to improve efficiency, performance and reduce construction waste.

New techniques of building construction are being researched, made possible by advances in 3D printing technology. In a form of additive building construction, similar to the additive manufacturing techniques for manufactured parts, building printing is making it possible to flexibly construct small commercial buildings and private habitations in around 20 hours, with built-in plumbing and electrical facilities, in one continuous build, using large 3D printers. Working versions of 3D-printing building technology are already printing 2 metres (6 ft 7 in) of building material per hour as of January 2013, with the next-generation printers capable of 3.5 metres (11 ft) per hour, sufficient to complete a building in a week. Dutch architect Janjaap Ruijssenaars's performative architecture 3D-printed building is scheduled to be built in 2014.

Construction processes

Design team

Shasta Dam under construction in June 1942

In the modern industrialized world, construction usually involves the translation of designs into reality. A formal design team may be assembled to plan the physical proceedings, and to integrate those proceedings with the other parts. The design usually consists of drawings and specifications, usually prepared by a design team including surveyors, civil engineers, cost engineers (or quantity surveyors), mechanical engineers, electrical engineers, structural engineers, fire protection engineers, planning consultants, architectural consultants, and archaeological consultants. The design team is most commonly employed by (i.e. in contract with) the property owner. Under this system, once the design is completed by the design team, a number of construction companies

or construction management companies may then be asked to make a bid for the work, either based directly on the design, or on the basis of drawings and a bill of quantities provided by a quantity surveyor. Following evaluation of bids, the owner will typically award a contract to the most cost efficient bidder.

The modern trend in design is toward integration of previously separated specialties, especially among large firms. In the past, architects, interior designers, engineers, developers, construction managers, and general contractors were more likely to be entirely separate companies, even in the larger firms. Presently, a firm that is nominally an "architecture" or "construction management" firm may have experts from all related fields as employees, or to have an associated company that provides each necessary skill. Thus, each such firm may offer itself as "one-stop shopping" for a construction project, from beginning to end. This is designated as a "design Build" contract where the contractor is given a performance specification and must undertake the project from design to construction, while adhering to the performance specifications.

Several project structures can assist the owner in this integration, including design-build, partnering and construction management. In general, each of these project structures allows the owner to integrate the services of architects, interior designers, engineers and constructors throughout design and construction. In response, many companies are growing beyond traditional offerings of design or construction services alone and are placing more emphasis on establishing relationships with other necessary participants through the design-build process.

The increasing complexity of construction projects creates the need for design professionals trained in all phases of the project's life-cycle and develop an appreciation of the building as an advanced technological system requiring close integration of many sub-systems and their individual components, including sustainability. Building engineering is an emerging discipline that attempts to meet this new challenge.

Financial advisors

Construction projects can suffer from preventable financial problems. Underbids ask for too little money to complete the project. Cash flow problems exist when the present amount of funding cannot cover the current costs for labour and materials, and because they are a matter of having sufficient funds at a specific time, can arise even when the overall total is enough. Fraud is a problem in many fields, but is notoriously prevalent in the construction field. Financial planning for the project is intended to ensure that a solid plan with adequate safeguards and contingency plans are in place before the project is started and is required to ensure that the plan is properly executed over the life of the project.

Mortgage bankers, accountants, and cost engineers are likely participants in creating an overall plan for the financial management of the building construction project. The presence of the mortgage banker is highly likely, even

in relatively small projects since the owner's equity in the property is the most obvious source of funding for a building project. Accountants act to study the expected monetary flow over the life of the project and to monitor the payouts throughout the process. Cost engineers and estimators apply expertise to relate the work and materials involved to a proper valuation. Cost overruns with government projects have occurred when the contractor was able to identify change orders or changes in the project resulting in large increases in cost, which are not subject to competition by other firm as they have already been eliminated from consideration after the initial bid.

Large projects can involve highly complex financial plans and often start with a conceptual estimate performed by a building estimator. As portions of a project are completed, they may be sold, supplanting one lender or owner for another, while the logistical requirements of having the right trades and materials available for each stage of the building construction project carries forward. In many English-speaking countries, but not the United States, projects typically use quantity surveyors.

Legal aspects

A construction project must fit into the legal framework governing the property. These include governmental regulations on the use of property, and obligations that are created in the process of construction.

The project must adhere to zoning and building code requirements. Constructing a project that fails to adhere to codes will not benefit the owner. Some legal requirements come from malum in the considerations, or the desire to prevent things that are indisputably bad – bridge collapses or explosions.

Other legal requirements come from malum prohibitum considerations, or things that are a matter of custom or expectation, such as isolating businesses to a business district and residences to a residential district. An attorney may seek changes or exemptions in the law governing the land where the building will be built, either by arguing that a rule is inapplicable (the bridge design will not collapse), or that the custom is no longer needed (acceptance of live-work spaces has grown in the community).

A construction project is a complex net of contracts and other legal obligations, each of which must be carefully considered. A contract is the exchange of a set of obligations between two or more parties, but it is not so simple a matter as trying to get the other side to agree to as much as possible in exchange for as little as possible. The time element in construction means that a delay costs money, and in cases of bottlenecks, the delay can be extremely expensive. Thus, the contracts must be designed to ensure that each side is capable of performing the obligations set out. Contracts that set out clear expectations and clear paths to accomplishing those expectations are far more likely to result in the project flowing smoothly, whereas poorly drafted contracts lead to confusion and collapse.

Legal advisors in the beginning of a construction project seek to identify ambiguities and other potential sources of trouble in the contract structure, and to present options for preventing problems. Throughout the process of the project, they work to avoid and resolve conflicts that arise. In each case, the lawyer facilitates an exchange of obligations that matches the reality of the project.

Interaction of expertise

Apartment complex under construction in Daegu, South Korea

Design, finance, and legal aspects overlap and interrelate. The design must be not only structurally sound and appropriate for the use and location, but must also be financially possible to build, and legal to use. The financial structure must accommodate the need for building the design provided, and must pay amounts that are legally owed. The legal structure must integrate the design into the surrounding legal framework, and enforce the financial consequences of the construction process.

Procurement

Procurement describes the merging of activities undertaken by the client to obtain a building. There are many different methods of construction procurement; however the three most common types of procurement are:

Traditional (Design-bid-build)

Design and build

Management contracting

There is also a growing number of new forms of procurement that involve relationship contracting where the emphasis is on a co-operative relationship between the principal and contractor and other stakeholders within a construction project. New forms include partnering such as Public-Private Partnering (PPPs) aka private finance initiatives (PFIs) and alliances such as "pure" or "project" alliances and "impure" or "strategic" alliances. The focus on co-operation is to ameliorate the many problems that arise from the often highly competitive and adversarial practices within the construction industry.

Traditional

Main article: Design–bid–build

This is the most common method of construction procurement and is well established and recognized. In this arrangement, the architect or engineer acts as the project coordinator. His or her role is to design the works, prepare the specifications and produce construction drawings, administer the contract, tender the works, and manage the works from inception to completion. There are direct contractual links between the architect's client and the main contractor. Any subcontractor will have a direct contractual relationship with the main contractor.

Design and build

This approach has become more common in recent years and involves the client contracting a single entity to both provide a design and to build that design. In some cases, the Design and Build (D & B) package can also include finding the site, arranging funding and applying for all necessary statutory consents.

The owner produces a list of requirements for a project, giving an overall view of the project's goals. Several D&B contractors present different ideas about how to accomplish these goals. The owner selects the ideas he or she likes best and hires the appropriate contractor. Often, it is not just one contractor, but a consortium of several contractors working together. Once a contractor (or a consortium/consortia) has been hired, they begin building the first phase of the project. As they build phase 1, they design phase 2. This is in contrast to a design-bid-build contract, where the project is completely designed by the owner, then bid on, then completed.

Kent Hansen pointed out that state departments of transportation (DOTs) usually use design build contracts as a way of getting projects done when states don't have the resources. In DOTs, design build contracts are usually used for very large projects.

Management procurement systems

In this arrangement the client plays an active role in the procurement system by entering into separate contracts with the designer (architect or engineer), the construction manager, and individual trade contractors. The client takes on the contractual role, while the construction or project manager provides the active role of managing the separate trade contracts, and ensuring that they complete all work smoothly and effectively together.

Management procurement systems are often used to speed up the procurement processes, allow the client greater flexibility in design variation throughout the contract, the ability to appoint individual work contractors, separate contractual responsibility on each individual throughout the contract, and to provide greater client control.

Authority having jurisdiction

In construction, the authority having jurisdiction (AHJ) is the governmental agency or sub-agency which regulates the construction process. In most cases, this is the municipality in which the building is located. However, construction performed for supra-municipal authorities are usually regulated directly by the owning authority, which becomes the AHJ.

Before the foundation can be dug, contractors are typically required to verify and have existing utility lines marked, either by the utilities themselves or through a company specializing in such services. This lessens the likelihood of damage to the existing electrical, water, sewage, phone, and cable facilities,

which could cause outages and potentially hazardous situations. During the construction of a building, the municipal building inspector inspects the building periodically to ensure that the construction adheres to the approved plans and the local building code. Once construction is complete and a final inspection has been passed, an occupancy permit may be issued.

An operating building must remain in compliance with the fire code. The fire code is enforced by the local fire department.

Changes made to a building that affect safety, including its use, expansion, structural integrity, and fire protection items, usually require approval of the AHJ for review concerning the building code.

Industry characteristics

In the United States, the industry has around $850 billion in annual revenue according to statistics tracked by the Census Bureau, with an $857 billion annual rate in March 2013, of which $600 billion is private (split evenly between residential and nonresidential) and the remainder is government. As of 2005, there were about 667,000 firms employing 1 million contractors (200,000 general contractors, 38,000 heavy, and 432,000 specialty); the average contractor employed fewer than 10 employees. As a whole, the industry employed an estimated 5.8 million as of April 2013, with a 13.2% unemployment rate

Careers

There are many routes to the different careers within the construction industry. There are three main tiers based on educational background and training, which vary by country:

Unskilled and semi-skilled – General site labor with little or no construction qualifications.

Skilled – Tradesmen who've served apprenticeships, typically in labor unions, and on-site managers who possess extensive knowledge and experience in their craft or profession.

Technical and management – Personnel with the greatest educational qualifications, usually graduate degrees, trained to design, manage and instruct the construction process.

Skilled occupations include carpenters, electricians, plumbers, ironworkers, masons, and many other manual crafts, as well as those involved in project management. In the UK these require further education qualifications, often in vocational subject areas. These qualifications are either obtained directly after the completion of compulsory education or through "on the job" apprenticeship training. In the UK, 8500 construction-related apprenticeships were commenced in 2007.

Technical and specialized occupations require more training as a greater technical knowledge is required. These professions also hold more legal

responsibility. A short list of the main careers with an outline of the educational requirements are given below:

Quantity surveyor – Typically holds a master's degree in quantity surveying. Chartered status is gained from the Royal Institution of Chartered Surveyors.

Architect – Typically holds 1, undergraduate 3 year degree in architecture + 1, post-graduate 2 year degree (DipArch or BArch) in architecture plus 24 months experience within the industry. To use the title "architect" the individual must be registered on the Architects Registration Board register of Architects.

Civil engineer – Typically holds a degree in a related subject. The Chartered Engineer qualification is controlled by the Engineering Council, and is often achieved through membership of the Institution of Civil Engineers. A new university graduate must hold a master's degree to become chartered, persons with bachelor's degrees may become an Incorporated Engineer.

Building services engineer – Often referred to as an "M&E Engineer" typically holds a degree in mechanical or electrical engineering. Chartered Engineer status is governed by the Engineering Council, mainly through the Chartered Institution of Building Services Engineers.

Project manager – Typically holds a 4-year or greater higher education qualification, but are often also qualified in another field such as quantity surveying or civil engineering.

Structural engineer – Typically holds a bachelors or master's degree in structural engineering. A P.ENG is required from the Professional Engineers, Ontario. (ON,CANADA) New university graduates must hold a master's degree to gain chartered status from the Engineering Council, mainly through the Institution of Structural Engineers (UK).

Civil Estimators are professionals who typically have a background in civil engineering, construction project management, or construction supervision.

In 2010 a salary survey revealed the differences in remuneration between different roles, sectors and locations in the construction and built environment industry. The results showed that areas of particularly strong growth in the construction industry, such as the Middle East, yield higher average salaries than in the UK for example. The average earning for a professional in the construction industry in the Middle East, across all sectors, job types and levels of experience, is £42,090, compared to £26,719 in the UK. This trend is not necessarily due to the fact that more affluent roles are available however as architects with 14 or more years experience working in the Middle East earns on average £43,389 per annum, compared to £40,000 in the UK. Some construction workers in the US/CANADA have made more than $100,000 annually, depending on their trade

Safety

Construction is one of the most dangerous occupations in the world, incurring more occupational fatalities than any other sector in both the United

States and in the European Union. In 2009, the fatal occupational injury rate among construction workers in the United States was nearly three times that for all workers. Falls are one of the most common causes of fatal and non-fatal injuries among construction workers. Proper safety equipment such as harnesses and guardrails and procedures such as securing ladders and inspecting scaffolding can curtail the risk of occupational injuries in the construction industry. Other major causes of fatalities in the construction industry include electrocution, transportation accidents, and trench cave-ins.

History

The first huts and shelters were constructed by hand or with simple tools. As cities grew during the Bronze Age, a class of professional craftsmen, like bricklayers and carpenters, appeared. Occasionally, slaves were used for construction work. In the Middle Ages, these were organized into guilds. In the 19th century, steam-powered machinery appeared, and later diesel- and electric powered vehicles such as cranes, excavators and bulldozers. Architecture and construction involves creating awesome structures that can show the beauty and creativity of the human intellect.

Fast-track construction has become more popular in the 21st century, with some estimates suggesting 40% of projects.

Текст 2

1. Прочитайте текст.
2. Найдите в тексте интернациональную лексику. Определите её значение и переведите на русский язык.
3. Перескажите текст на русском языке.

Construction

Many successful small businesses decide to expand their operations either by purchasing, leasing, or building a new facility. In some instances, the business in question relocates its entire operation to the new facility. In other cases, the business may use the new facility to house excess inventory, maintain equipment, relieve office overcrowding, or open a new store.

For those companies that decide to expand via new construction, the experience can be an unsettling one, full of uncertainties. In fact, relatively few start-up businesses choose construction as their mode of entry due to the higher costs associated with it and the greater length of time involved from the breaking ground stage to the day when the establishment opens its doors for business. Established small- and mid-sized businesses are likely to be in a better position financially to launch a new construction project. Such firms have a proven track record—which can help them with financing—and already-

productive operations that bring in revenue that can be used to defray the costs of construction.

A full assessment of the advantages and disadvantages of new construction should be undertaken before any decision is made to build new. Designing and building a new facility has the advantage of providing a company with exactly the space and arrangements to meet its needs. The obvious disadvantages are the delay in occupancy while land acquisition, design work, and building are going on, and the cost of overruns, common in large projects. Oversight responsibilities are essential but can also be very time consuming and distract from the primary business of a company.

Certainly, there are risks associated with construction. But for small- and mid-sized business owners that choose this method of expansion and/or growth—and plan wisely before, during, and after the construction phase—it can also mark the beginning of a bright new chapter in the company's history. A well-designed and built property can allow a company to generate additional revenue, reduce expenses, and/or increase efficiency.

SECURING A BUILDING CONTRACTOR

Some sources of potential building contractors include professional association databases, referrals from architects or fellow small business owners, and a competitive bidding process. "It is important to find a contractor that can build in your specific industry, whether it's a restaurant, health care facility, industrial plant, or technology center," Amanda Strickland wrote in the Dallas Business Journal. "Contractors tend to have niches."

A small business owner seeking to secure a good building contractor should concentrate on three factors:

- The contractor's reputation in the community.
- The financial condition of the contractor.
- The status of currently uncompleted jobs by the contractor.

There are many warning signs to watch for when assessing potential contractors. Is the contractor known for subcontracting out large percentages of the total construction work? Does the contractor have a history of clashes with subcontractors? How long has the contractor done business in the area? What percentage of jobs does she complete on schedule? Does his previous work experience adequately match the sort of renovation or construction that your company needs? Does the contractor have a backlog of projects that could hurt her ability to meet your timetable? What sort of references can he provide? The answers to all of these questions can be either reassuring or cause for further investigation. In either case, the key is to make sure that you ask them.

One way in which small business owners can learn the answers to some of these questions is by requiring bidding contractors to submit a surety bond,

which is basically a three-party contract between the contractor, the project owner, and the underwriting surety company. Surety companies will make an extensive review of the construction company before issuing such a bond. In addition, if the contractor signs the bond, he is basically guaranteeing his ability to complete the project on which he is bidding.

MONITORING THE CONSTRUCTION PROCESS

After the bidding process is completed and the building contract awarded, the successful contractor should be asked to provide a performance bond. Such a bond guarantees that the project's contractual provisions will be carried out. In addition, a payment bond should be secured which certifies that suppliers and subcontractors will be paid. Ensuring that the contractor and all of his subcontractors have adequate insurance (workers' compensation, general and umbrella liability, equipment, builders' risk, etc.) to address problems is another key to attaining peace of mind for the small business owner. Finally, the project owner needs to make sure that he or she continuously monitors the performance of the contractor.

Текст 3

1. Прочитайте текст.
2. Найдите в тексте интернациональную лексику. Определите её значение и переведите на русский язык.
3. Выполните реферативный перевод текста.

Construction

Troutman Sanders' Construction Practice Group understands the complicated and diverse risks faced by the construction industry. Our attorneys can guide you through the maze of challenges that arise during the planning, design, construction and operation of virtually every type construction project. We are adept in projects of all shapes and sizes, including but not limited to:

- Airports
- Hospitals and medical centers
- Power plants
- Strip malls
- Apartments and condominiums
- Hotels and convention centers
- Power transmission facilities
- Theme parks
- Aquariums
- Industrial projects
- Prison

- Transit facilities
- Casinos
- Libraries
- Public and private schools
- Treatment plants
- Colleges and universities
- Military facilities
- Resorts
- Tunnels
- Courthouses
- Museums
- Retail and warehouse
- Utilities
- Factories
- Nuclear power plants
- Shopping centers
- Warehouses
- Highways
- Office buildings
- Skyscrapers
- Zoos

The Construction Practice Group consists of a team of more than 25 nationally recognized attorneys. With more than 275 years of collective experience, our construction attorneys provide clients with pragmatic answers to the many technical and legal questions which arise during the course of a project.

The principal members of the group have focused their entire careers on representing the needs of construction industry clients, both nationally and internationally. Several practice group members are former construction contractors or engineers, and all of the senior members of the group have extensive experience spanning all segments of the construction industry. We advise clients in all phases of a construction project, including pre-construction planning, contract negotiation, problem-solving during construction, project closeout, and resolving project disputes.

Advice and Counseling – Before, During & After

Our attorneys routinely provide advice and counseling to clients regarding the numerous issues that arise in connection with development and construction in the private and public sectors. During pre-construction, we counsel clients upon project delivery methods, project finance vehicles, licensing and permits, contract drafting and negotiations, insurance and bonding arrangements, bidding

and award issues, as well as the myriad of pre-project initiatives necessary to a successful development. During the course of construction, we advise clients upon contract administration, labor and employment matters, OSHA regulations and compliance, accident response, claims avoidance and risk management, environmental issues, and the "real time" resolution of small problems before they mature into disputes. During the post construction phase, we assist clients with mechanic's liens and bond claims, insurance coverage issues, warranty problems, maintenance and operations issues, construction defect claims, and all forms of dispute resolution.

Public Contracts

Troutman's Construction attorneys represent clients in connection with the regulated world of public contracts on federal, state and local levels. We regularly counsel clients upon pre-award matters such as privatization, bid preparation, MBE/DBE and socioeconomic requirements, suspension and debarment, decertification, bid protest proceedings and a host of other public procurement issues. We also represent clients upon post-award matters including requests for equitable adjustment, Davis-Bacon issues, the negotiation of change orders, termination and reinstatement, Qui Tam and fraudulent claims, and a variety of other matters before contracting officers, administrative agencies and administrative boards.

Dispute Resolution

Our construction attorneys are experienced litigators, having handled construction claims and disputes in all 50 states, including federal and state courts, administrative agencies and boards, as well as all forms of alternative dispute resolution, including structured settlements, mediation, arbitration and mini-trial. Our experience spans all shapes and sizes of construction disputes including claims involving:

- Acceleration
- Changes
- Construction defects
- Delay and disruption
- Denial of access
- Differing conditions
- Environmental hazards
- Faulty plans and specifications
- Improper project management
- Incomplete and defective design
- Labor and equipment inefficiency
- Material escalation
- Mechanic's liens
- Non-conforming work

- Performance and payment bonds
- Over-inspection Safety and OSHA violations
- Termination for default or convenience
- Warranty and project closeout issues

Many of the construction attorneys within the group are active members of both the American Arbitration Association and the Center for Public Resources Institute for Dispute Resolution.

Clients

Our clients span the entire spectrum of the construction industry from governmental entities, owners and developers, public utilities, general contractors, subcontractors, suppliers, design and engineering firms, as well as sureties and guarantors. We represent multi-national public corporations and industry trade associations as well as local regional clients and individual entrepreneurs.

Philosophy & Commitment

Our Construction Practice Group takes great pride in providing the sophistication and resources of an international law firm while furnishing the efficiency and personal attention of a specialized boutique practice. We are committed to providing excellent service to all of our clients, both big and small, in the most efficient and economical manner.

The Construction Practice Group is also committed to the education and growth of the construction industry. Our construction attorneys are active in industry trade groups including the National Association of Industrial and Office Properties (NAIOP), Associated Builders & Contractors (ABC), Associated General Contractors (AGC), Design Build Institute of America (DBIA), Construction Financial Managers Association (CFMA), National Association of Women in Construction (NAWIC), American Society of Civil Engineers, (ASCE), American Institute of Construction (AIC), and various other trade groups and associations. We frequently speak at professional conferences and continuing education seminars in both the national and state level and have published numerous articles or chapters on construction and public contracts in construction law books, trade publications and industry periodicals.

Our attorneys routinely present lectures and seminars, both in-house and at client offices, designed to inform clients of the latest developments concerning construction and public contracts, including related matters concerning corporate transactions, environmental, immigration, labor and employment, taxes and issue of current legislation affecting the construction industry. The Construction Practice Group also publishes a periodic newsletter addressing construction industry and government contracts matters.

Multi-Disciplinary Approach

We recognize that each construction project is unique. As a result, we exercise a flexible and client-focused approach to staffing: we first assess the project and identify our client's goals, and then assign the best-suited attorney, or team of attorneys, to advise and counsel. Although the principal members of the group focus their practices entirely upon construction law and public contracts, they have instant access to other nationally respected practice groups with expertise in such areas as project finance and development, environmental compliance and regulations, antitrust, real estate, labor and employment, property use and zoning, use and sales tax, bankruptcy, intellectual property, and public law and lobbying.

Our Services

Project Formation and Finance. We assist in creating all forms of special purpose entities, whether public authorities, joint ventures, limited liability companies, teaming arrangements, or quasi public agencies and authorities. The Construction Practice Group also works closely with the Project Finance and Development Group to arrange for the funding of developments including capital markets, commercial banks, export credit agencies, and multi-lateral development bank facilities.

Project Delivery Systems. We advise and assist in selecting the full array of delivery systems, including the customary design-bid-build, fast-track construction, design/build (D/B), construction manager (CM agency and at-risk), engineer-procure-construct (EPC or turnkey), finance-design-build (FD/B), build-own-operate-transfer (BOOT), design-build-operate-maintain (D/BOM) as well as other forms of project delivery systems.

Contract Preparation and Negotiation. We prepare and negotiate complex design and construction contracts, whether based upon lump sum, unit prices, guaranteed maximum price, cost plus, cost plus fixed fee, cost plus percentage of cost, incentive contracts or other contract types. Our attorneys are familiar with all of the standard industry forms including: American Institute of Architects (AIA), Associated General Contractors (AGC), Design Build Institute of America (DBIA), Construction Management Association of America (CMAA), and the Engineers Joint Contracts Documents Committee (EJCDC).

Contract Review and Risk Assessment. We review proposed and existing contracts and suggest modifications and identify terms that present significant risks to our clients. Our attorneys propose procedures and document controls to then manage and minimize the cost and schedule risks imposed by those contract terms and conditions that cannot be negotiated away.

Accident Response. Our attorneys provide rapid response services to assist clients in issues involving construction accidents involving catastrophic loss, including serious injury or death of workers, or the collapse of equipment, shoring, or buildings.

Safety and OSHA Compliance. Our attorneys advise clients in complying with safety regulations as well as defending against citations issued to clients by OSHA at the federal or state level. We frequently advise clients with relation to issues on record keeping and reporting, fall protection, abatement of lead and asbestos, excavation and trenching.

Claims Avoidance and Management. We assist clients in adopting practices and procedures to avoid claims and/or to manage the claims in a manner that minimizes the costs and schedule impacts to the project. Our attorneys are also adept at reviewing and assisting in the management of claims so as to mitigate the risks to both owner and contractor.

Project Controls and Best Practices. We advise clients in creating and maintaining project controls necessary to administer and manage the design and construction process. Our attorneys also provide advice and consultation based upon their experience to establish "best practices" in assisting clients to manage and minimize risks at all levels.

Legislative and Public Law. The Construction Practice Group works closely with the Public Law and Lobbying Group to draft proposed federal, state and local regulations and statutes that advance the interests of our clients and the construction industry. We also interact with public officials and governmental entities to resolve issues of permitting, licensing, zoning, noise ordinance, and other publicly related matters.

Insurance and Bonding. We assist clients in obtaining and enforcing insurance coverage rights, whether against their own insurer or as an additional insured under a policy issued by a contractor, subcontractor or other entity. We also represent clients in the prosecution and defense of bid bonds, performance and payment bonds, mechanic's lien bonds, warranty bonds, as well as general indemnity agreements executed in connection with the above.

Labor and Employment. We work closely with Troutman's Labor and Employment Practice Group to interpret collective bargaining agreements, ensure the continuity of projects in the face of labor disputes, and assist clients in complying with wage and hour and employment laws, including age, race, disability and gender employment discrimination and equal employment opportunity issues.

Environmental and Regulatory Issues. The Construction Practice Group, in conjunction with Troutman's Environmental Practice Group, works to ensure compliance with environmental laws and regulations including NPDES, CERCLA, RCLRA, as well as other applicable environmental laws. In the event of a violation, we intervene with the environmental enforcement division of the EPA or local agency to negotiate and resolve the violation as quickly and efficiently as possible.

Indoor Air Quality. We assist clients with the resolution of indoor air quality issues, including advising on the remediation and cleanup of mold, the investigation of radon and the prosecution and defense of sick building syndrome claims.

Client Training. We frequently provide educational courses, training, and seminars to clients regarding topical issues affecting the construction industry, including existing laws and regulations, recent trends and industry issues, job site management and project controls, among others.

International Projects. We interface with attorneys in our Hong Kong offices to assist clients that are doing business throughout Asia. We routinely assist clients in addressing challenges arising from differences in culture, politics, economies, or commercial relations throughout the northern hemisphere.

Public Contracts. The Construction Practice group represents contractors and other entities that provide a wide array of goods and services to government agencies, routinely assisting firms in connection with contracts involving all the most significant federal purchasing agencies – DOD, DOE, EPA, NASA, GSA, HHS, USPS – as well as procurements by many other federal, state and local entities.

Dispute Resolution. Our attorneys have handled construction disputes of every kind, shape and size, and have access to forms and experience of every type with respect to both construction and development.

Текст 4

1. Прочитайте текст.
2. Выпишите терминологическую лексику и переведите с учетом контекста.
3. Составьте аннотацию текста.

Simple Project Management

The development of a construction plan is very much analogous to the development of a good facility design. The planner must weigh the costs and reliability of different options while at the same time insuring technical feasibility. Construction planning is more difficult in some ways since the building process is dynamic as the site and the physical facility change over time as construction proceeds. On the other hand, construction operations tend to be fairly standard from one project to another, whereas structural or foundation details might differ considerably from one facility to another.

Forming a good construction plan is an exceptionally challenging problem. There are numerous possible plans available for any given project. While past experience is a good guide to construction planning, each project is likely to have special problems or opportunities that may require considerable ingenuity and creativity to overcome or exploit. Unfortunately, it is quite difficult to provide direct guidance concerning general procedures or strategies to form good plans in all circumstances. There are some recommendations or issues that can be addressed to describe the characteristics of good plans, but this does not necessarily tell a planner how to discover a good plan. However, as in the design

process, strategies of decomposition in which planning is divided into subproblems and hierarchical planning in which general activities are repeatably subdivided into more specific tasks can be readily adopted in many cases.

From the standpoint of construction contractors or the construction divisions of large firms, the planning process for construction projects consists of three stages that take place between the moment in which a planner starts the plan for the construction of a facility to the moment in which the evaluation of the final output of the construction process is finished.

The estimate stage involves the development of a cost and duration estimate for the construction of a facility as part of the proposal of a contractor to an owner. It is the stage in which assumptions of resource commitment to the necessary activities to build the facility are made by a planner. A careful and thorough analysis of different conditions imposed by the construction project design and by site characteristics are taken into consideration to determine the best estimate. The success of a contractor depends upon this estimate, not only to obtain a job but also to construct the facility with the highest profit. The planner has to look for the time-cost combination that will allow the contractor to be successful in his commitment. The result of a high estimate would be to lose the job, and the result of a low estimate could be to win the job, but to lose money in the construction process. When changes are done, they should improve the estimate, taking into account not only present effects, but also future outcomes of succeeding activities. It is very seldom the case in which the output of the construction process exactly echoes the estimate offered to the owner.

In the monitoring and control stage of the construction process, the construction manager has to keep constant track of both activities' durations and ongoing costs. It is misleading to think that if the construction of the facility is on schedule or ahead of schedule, the cost will also be on the estimate or below the estimate, especially if several changes are made. Constant evaluation is necessary until the construction of the facility is complete. When work is finished in the construction process, and information about it is provided to the planner, the third stage of the planning process can begin.

The evaluation stage is the one in which results of the construction process are matched against the estimate. A planner deals with this uncertainty during the estimate stage. Only when the outcome of the construction process is known is he/she able to evaluate the validity of the estimate. It is in this last stage of the planning process that he or she determines if the assumptions were correct. If they were not or if new constraints emerge, he/she should introduce corresponding adjustments in future planning.

Pros and Cons of Modular Homes

Have you ever fancied buying a modular home, if not for anything else but the convenience factor? Well, then this article is a must-read, because it enlists

the pros and cons of opting for a modular home. Did You Know? Modular homes are different from manufactured homes (also known as mobile homes), as the latter has a wheeled chassis permanently attached to it. This means that mobile homes come with the advantage of permanent transportability, which is not the case with modular homes.

Modular homes are constructed by assembling the pieces built in a factory. A modular home is similar to a traditional home, as it is built on-site, unlike mobile or manufactured homes. However, the difference between traditional and modular homes is that sections or chunks of the latter are manufactured on the assembly line of a factory, and are then transported to the site by a truck.

Now, many of us might be pondering on whether a modular home would be as good as a traditional home, and how would it feel like to live in a home that is made by assembling individual prefabricated pieces. However, the fact is that the modern modular homes offer you a lot more than just a box-like structure to live in. In fact, you'll find modular homes that have two or more stories, complete with porches, luxurious interiors, state-of-the-art kitchens, and a lot more.

While a modular home can be convenient for more reasons than one, this relatively new concept of building homes is not devoid of its own little share of drawbacks. So, is it worth investing in a modular home? Just have a look at the pros and cons to know if a prefabricated home is really for you.

Advantages

Modular homes are a trend that is catching up fast. Wondering why? Well, it's because of its several advantages, and we shall focus on them below.

Saves on Construction Cost

Since a major part of the construction of a modular home takes place in a factory setting, you end up saving anywhere between 10-20% on the cost of construction, when compared to a traditional home of similar dimensions. This is the primary reason why more and more people are opting for modular homes these days, as the money saved can be put to use in getting items of home decor, furniture, and other accessories that can help improve the living experience.

The lower manufacturing cost is due to the fact that modular homes are mass manufactured in a factory, which cuts down on wastage of raw materials. Also, unlike a traditional house, a modular home does not demand huge amounts of money spent towards labor costs. Another factor that is responsible for the huge difference in the costs is the fact that parts of the home are built within the controlled environment of a factory, without any interruptions caused due to unfavorable weather conditions.

Saves Time

A modular home is ready in a significantly lesser time than a traditional "stick-built" home, which can be as much as 65% less. The reason is that a

major portion is built on the assembly line of a factory, and gets completed within a stipulated time-frame. In fact, you'll be amazed to learn that it takes only a day to assemble the parts together, and a few weeks for adding the finishing touches to the end product.

So, while it can take several months to a year to complete a traditional home, an average modular home is ready within just a few weeks. The shorter construction period cuts down on vandalism. Note that the construction time as well as the quality depends on the company, and you should do some research before you choose one. If you're looking for a home where you can move in as soon as you can, then a modular home is what you should go for.

Ideal for Remote Areas

When building a structure in a remote area, it is easier and more cost-efficient to transport the prefabricated chunks of a modular structure at one go, than carrying raw materials for traditional construction as and when required. This is the reason modular structures are highly recommended for remote areas.

Ideal for Regions that Experience Bad Weather

Building a traditional home can be really difficult in regions that experience frequent bouts of unfavorable weather, because it can cause unnecessary delay in construction, in addition to causing damage to building materials. In such a scenario, a modular structure can make things a lot easier, as it takes a lot less time to complete, and a major part of the building process has already been done away with.

Prevents Wastage of Raw Materials

Since the parts of a modular home are built in a factory, there is no risk of damage caused due to effects of the weather. As a result, there is less wastage of raw materials. Also, the manufacturer is well aware of the quantity of raw materials required to give shape to a particular design of modular housing, which cuts down on the chances of wastage. And since generation of lesser waste is good for the environment, modular housing is environment friendly too!

Highly Energy Efficient

The framing used for building modular homes has a layer of insulating material placed within, which minimizes the cost of heating or cooling, and reduces electricity bills. Since the chunks are manufactured in a factory, they are tested for energy efficiency before being transported to the site. Needless to say, a home that is energy efficient helps reduce your carbon footprint, and is cost-effective at the same time.

Highly Versatile

Advancements in technology has made it possible to create different designs of modular homes. So, if you think that your concept of a dream home would

not be available as a modular structure, then think again! Today, modern modular homes come in a wide range of shapes, sizes, and designs. Another great thing about modular homes is that you can easily include more elements, such as an additional room or a porch, anytime you want to. This makes modular housing far more versatile when compared to traditional housing. Another element that adds to the versatility of these homes is the fact that they can be used to build everything from homes to offices, and schools to healthcare centers!

Easier to Dismantle

So, you've built your dream home in Los Angeles, and are glad that you did. However, one fine day, you receive a great job offer that requires you to relocate to a different city. You're elated, but the thought of moving out of your dream home makes you a tad bit sad. But with a modular home, you'd have no reason to worry, because these structures can be safely dismantled and transported to any place you want. So, you'd have your dream home rebuilt again, this time in a new location! Sounds great, isn't it?

Meets Quality Standards

While you might be apprehensive about investing in a modular home because it might not be of the same quality as a site-built home, but the fact is that, a modular home does not compromise on the quality factor. In fact, it is as good as a traditional home when it comes to the ability to withstand the weather and natural calamities, such as storms and tornadoes. If maintained well, modular homes can remain in good shape for years on end.

Disadvantages

After the seemingly endless list of advantages, let us take a quick look at the few disadvantages of modular homes.

Financing Can be Difficult

It might be difficult to procure financing for modular homes, as unfortunately, many insurance companies still do not consider them at par with traditional homes. You must pay the modular home dealer the full amount before the completion of the building job. Since the completion time for a modular home is lesser, one might find it a little difficult to arrange for the money in such a short time.

Low Equity

Modular homes do not build equity as traditional homes do. This can be a problem if you're planning to sell the house in future.

Not Allowed Everywhere

Zoning restrictions prohibit the installation of modular homes in certain areas. However, modular homes are slowly gaining popularity, and are considered at par with traditional homes in many areas.

Risk of Damage

As we know, a modular home is built by assembling parts made in a factory. This poses a risk of the relatively bigger parts getting damaged during transportation. However, this can be prevented by taking extra care while packing the pieces and transporting them to the site.

So, you see that a modular home can be the ideal housing solution in more ways than one. All you need to do is choose a manufacturer who can provide you with the floor plan or design that you seek, at an affordable price.

Текст 5

1. Прочитайте текст.
2. Выпишите терминологическую лексику и переведите с учетом контекста.
3. Составьте план текста.
4. Перескажите текст на английском языке, используя термины.

How to Build a Brick Wall

Demarcate your property, enhance the patio, or simply shut out the world with a simple brick wall. You can build your own brick wall in these steps given in this article.

Building a brick wall yourself can give you a sense of accomplishment, that you can not derive when you hire a professional bricklayer. However, if you have no prior experience in masonry, then this task can be pretty challenging for you. If you plan to build a brick wall, that lasts long and withstands all the climates, then it is imperative that you learn the correct technique. No matter if you are planning home construction, garden brick wall or a veneer wall, the method and the building materials required, remain the same.

Before you begin, you need to remember that building a brick wall is not a cake walk. You would have to set aside a couple of weekends for the task to be completed. You must remember that a strong wall is based on a firm foundation and this definitely is time-consuming. Before building the brick wall, you need to mark the ground with some chalk powder.

Material Required to Build a Brick Wall

- Bricks
- Cement

- Sand
- Gravel
- Bubble Level
- Trowel
- Spade
- Hook Level

Dig a trench that is 300mm deep and 300mm wide, spanning the length of the area where you want your brick wall.

Pour concrete into this trench and push it down with a post, so as to get rid of air pockets. Let the footing 'cure' for a couple of days. Use an old gunny sack to keep the footing covered so that it sets well.

Place bricks at either end of the footing. Check the level of the bricks and hook a line so that it lines with the top of the bricks. Complete the first layer of bricks. While laying the second layer break a brick in half and place at two ends. Complete the layer ensuring the gaps between two bricks is maintained.

Place bricks at either end of the footing. Check the level of the bricks and hook a line so that it lines with the top of the bricks. Complete the first layer of bricks. While laying the second layer break a brick in half and place at two ends. Complete the layer ensuring the gaps between two bricks is maintained.

The mortar between two layers of bricks should be pointed or shaped so that it can shed rainwater. Use the point of the trowel to point the edges in either of the three fashions - flush, concave or weather struck joint. Stop building the wall at the height you desire. Balance the level on the wall and check the level. Allow the mortar to set and your wall is ready.

Make sure to check the level and alignment every now and then to get a straight and even leveled wall. When the mortar has set but not hardened, tool the joints of the bricks, so as to get a smooth finish. Do remember to moisten the wall till the cement filling harden up.

How to Build a House Step by Step

Building a house step by step requires a lot of systematic planning and hard work. In this article, we shall discuss vital points in home building.

Building a home is one of our biggest dreams. We have many ideas in our mind about how our new home should be. The peace of mind and security which our own home offers us makes us invest a huge amount of money in it. But, when we invest our life's savings, we should also see to it that the home is as per our plans and desires.

Building a Home Step by Step

The best way to build a house would be to start from the location of the home and the budget for the home. Your budget would largely depend on the location you choose and hence, the suggestion would be to choose that location where you can afford to build a home. Then, it would be the time to get the plan

for your home from an architect. Discuss with him what size of rooms you would prefer, what should be the total terrace and balcony area, how much should be the parking etc. These two steps are the most important ones in knowing how to build a house. You can start with the actual construction work of your home once you approve the plan yourself and get necessary permissions from the government authorities.

Ensuring consistent and proper supply of raw materials and other building materials such as bricks and cement along with labor is an important step in building of a home. For home construction, you have two choices, either build it yourself or hire a contractor. You can consider doing the job yourself if you have some experience in this area.

If there is an old structure on the site where you wish to build your own house, then the first step would be to demolish it completely. Before the actual construction work starts, you will have to clear the construction site from all debris and waste materials. Then comes the important task of building the foundation of the home by digging. This task should be personally inspected by you as it is important to do the foundation perfectly for the home to be strong. For a slab, you will need to lay the plumbing lines and this should be done by hiring expert plumbers. Then you will have to pour concrete on your foundation. Bolts need to be inserted in the concrete when it is sufficiently wet.

After this, you will have to lay the slabs one after the other under the inspection of a civil engineer. Then, after the plastering work is complete, the work on the interior of the home will begin. In the home interior, special attention should be given to the bathroom fittings, flooring of the home, kitchen trolleys and having windows and doors as per your convenience.

Plumbing work inside the home should be done with a lot of attention and planning. Since a lot of money is spent on the flooring, you should inspect the tiles before installing them because removing the installed tiles will again increase your costs. If you want to decorate your home with Plaster of Paris (POP) structures, then this would be the right time to get it done under the guidance of an interior designer. Get the landscaping and gardening work done from a reputed landscape designer to add to the beauty of your home. Give the home a good paint of attractive colors from inside and outside after you choose your color scheme.

You will easily learn how to build a house after you understand the basic concepts and requirements of home building. Home building requires a lot of patience, interest and hard work and it is important for you to stay motivated and enthusiastic throughout this task.

How to Build Concrete Stairs

If you are stepping away from making concrete steps, thinking that it's impossible to build them yourself, you are wrong. Here is a guide on how to build concrete stairs. Read on.

I have never been able to understand why a cloudy weather makes me feel nostalgic. One such cloudy day when I was all alone at home, walking up the staircase leading to my room, I started remembering the days when my world revolved around that newly built concrete staircase. It was the only way that led to 'my' room and this made those concrete steps so special to me. I remembered all the little things me and my staircase shared! I used to swing on her railing, jump down her steps in excitement, spend time counting her balusters, run up her steps to go to my room, and standing on her landing, when I could view my house from above, I used to feel on 'top of the world'! They were built years ago; they look old now. But even today while walking those steps, I remember the planning, the arrangements and the fun we had had while building them. Let me tell you what we did. So, here's something on how to build concrete stairs.

Measurements: Before you begin with the actual stair construction, decide where they would be located and the type of stairs you wish to have. If you plan to build the concrete stairs in the exteriors of your house, you need to maintain the step dimensions as prescribed by your local building code. Otherwise, you have complete freedom of choosing the measurements and layout of your staircase. Generally,

- For a step height of 4-5 inches, a tread depth of 16-18 inches is recommended.
- For a step height of 6-7 inches, it should be between 10 and 14 inches.

The flat walking surface of a step is the step tread and the vertical boards joining the treads are the step risers. As you can see, their prescribed measurements vary inversely. It is advisable to make a simple sketch of your step design before you begin building the stairs.

Number of Steps: Now, you need to calculate the number of steps you would be constructing. You will have to calculate this number by dividing the planned height of the staircase by the height of each step. Along with the rise of the steps, consider the footing, which is mostly a gravel and concrete foundation used to give support and stability to the steps.

Building Concrete Forms for the Stairs: Once done counting, you need to work on the concrete forms of the stairs. The molds into which concrete is poured are referred to as concrete forms.

Cut out the forms from good plywood sheets. You can use yellow pine or spruce form boards.

While doing so, see that you maintain a downward slope of one-quarter inch so that each step has an upward rise and you do not end up building a solid concrete mass.

Make sure that the forms support the weight of concrete.

Start with the bottom step first. Once the first step is formed, continue with the rest of the steps such that each stair form is smaller than the prior one, with a difference equal to the size of the tread.

With this, the side forms of the staircase are ready.

Building Forms for the Risers: The next step is to build forms for the risers. Their length should be such that they overlap the side forms and their height should be same as that of the riser. Place the stair run forms on both sides of the porch/platform that the staircase would be leading to. Each form should be placed perpendicular to the porch. Support the forms with strong wooden or metal posts known as stakes, with screws or nails.

Pouring Concrete: The next very important step is that of pouring concrete in the forms. Mix the concrete as per the manufacturer's instructions and ladle the mixed concrete into the forms with the help of a shovel. Remove excess concrete, if any, and tap each form lightly to release the air trapped inside. Do not pour concrete directly into the forms or you might end up spilling it all over the place. Start with the bottom step and work your way up. Work on one layer at a time and each time, ensure that the previous step is set before moving to the next one.

Finishing the Steps: The last and somewhat difficult step in concrete stair construction is that of finishing the steps. Here, you will require a finishing trowel to smooth out the semi-hard concrete. After the finishing is done, you will need to use a small broom and drag it from one end of the step to the other in one stroke. This process will leave small lines on the treads, giving them grip. Now, let the concrete cure and harden after which the side forms can be removed. You can smoothen the sides with a trowel or use water to help the hard concrete to smooth out. Let the concrete harden for a day and your steps will be ready to be stepped on.

Now that you know how to build concrete stairs, take a step forward in building them. You will feel proud of having paved the path to where you had planned to go 'step by step'!

Cost to Build a House Per Square Foot

If you are trying to calculate the cost of building a house, this article will be helpful. Such a project requires a lot of study and analysis of building and material costs. Read to get an idea about how you can get a rough estimate of house building costs.

Building your own house is a dream of a lifetime, and it's essential that you calculate the building costs, so that you can ensure that your finances are adequate for the job at hand. How much does it cost to build a house per square foot? Sounds like a simple enough question, but quoting an exact numerical answer to it, will need a supercomputer for sure!

It will have to analyze all the prices of all houses ever built in the United States of America, will have to know the building costs, material costs, real estate prices in every area, the variable costs of labor in different regions and future market prices. From all this information, it will have to construct a formula, that can calculate building costs per square foot and then average it out over all these variables, to give you a number! Unfortunately, we do not have a

supercomputer or the data and therefore it is not possible to give you an absolute number, as it's an unrealistic question to ask.

However, if you are willing to study and work out all the details that are involved in building your house and gather all the related information, then you can come up with a cost estimate. The method of estimating the total building costs per square foot, is to calculate the total estimated cost for building your house, according to current market prices (without including price of land purchase) and then dividing it by the total built-in floor area in square feet. Home construction is a satisfying, but hugely challenging job, that requires a lot of planning. Still, considering the rough price spread all over the country, you may expect the per square foot cost to be anywhere between $90 to more than $150 per square foot, depending on the quality of furnishing, degree of lavishness, house design and many other factors explained in the following lines.

Factors Affecting Construction Cost

Let us look at the factors that affect the building costs per square foot. The prime factors are as follows:

Total Size & Shape of House: The total size and shape of your house will affect the building costs per square foot. A box shaped house costs less while unconventional designs, with more architectural complexity will cost more. The number of floors and rooms to be built, will decide the roofing costs.

Land & Cost of Site Preparation: A major expense before even beginning the building of a house is the leveling costs of a land plot. The site needs to be dug, to build the foundation, which adds to the costs. A land with a slope is difficult to build on and needs a lot of leveling.

Building Material Costs: This is a very important parameter, which matters a lot. The kind of materials you use for building your house, affect the building costs.

Labor Costs: This is the money you need to pay for the labor involved in construction.

Quality of Furnishing: The cost of your house is of course directly proportional to the degree of lavishness you go for, in terms of furnishing and facilities. A swimming pool for example, will cause the building costs per square foot to sky rocket.

Location: An important parameter is the location of your house as it will decide the labor costs and prices of building material, which are subject to the local market fluctuations.

Tips on Calculating Building Cost

After that overview of factors affecting building costs, let me share some tips on how you can calculate the cost to build a house, on your own.

Be Clear About the House Design

Before you can make any estimates, you need to have a built-to-scale design of your house, made by a qualified architect. It needs to embody everything that you expect your house to be. Without a design, no estimation is possible. The design can help you in getting a realistic estimate of all the costs involved in building your house.

Gather Information About Current Market Costs

Next thing to do is consult your architect and make a list of the building materials involved in house construction. Gather information about market costs, related to every one of the above factors.

Take Help From Local Contractors

To get an idea about building costs, consult builders in your area. If possible, inquire about the building costs of houses, which are similar to the design of your house. All this information, which includes building, labor, material and architectural designing costs will enable you to come up with a realistic number of total cost to build your house. Then divide it by the total square footage of your house flooring, which will give you the building cost per square foot.

All that said and done, there are two ways of approaching the problem of estimation. Either you create a model of your dream home in excruciating detail and then estimate the cost, by calculating the price of each factor, or you decide the maximum amount you are willing to spend and find out what kind of house fits that budget. The latter approach is more realistic one. Make sure that your total building budget is 10% to 15% more than the estimated total cost of building. This precaution is to keep a margin for unforeseen expenses and inflation, arising out of changing market conditions. Planning in advance is the key.

Geodesic Dome Homes

A geodesic dome home is a structure that is built on the lines of geodesic domes. It is made of an internal metal framework that supports the shell. Let's learn about the ways in which dome homes could affect our quality of living.

A revolution in architecture, geodesic domes are a marvel in terms of house designs that are apart from conventional structures. There are just so many advantages of having one as your home, that you might actually consider it as an option. These kinds of domes have existed since WWI where the first geodesic dome was built in Germany. And since then there are plenty of manufacturing companies that offer domes for sale of any shape and size. You have the choice of either getting it constructed from scratch or getting a ready-made one. Let's have a look at the way these domes are built and understand how beneficial they can actually be as a house.

Geodesic Domes

Homes built using the design of a geodesic dome are known as geodesic dome homes. A geodesic is a line that is made across the surface of a sphere such that the sphere is divided in half. A geodesic dome consists of a number of geodesics (lines) running across its surface that intersect each other to form shapes, mostly equidistant definite triangles. These shapes are present uniformly across the sphere and thus help in keeping the whole structure stable. A geodesic dome home is constructed using a partially spherical dome as its roof, in place of a rectangular concrete ceiling or tiles that is common with present day home building. These domes can be made from materials ranging from soft fabric to hard metal, and are known to be extremely energy efficient, provided they are used to their capacity. Of course there are a few disadvantages that are part and parcel of this kind of structure which we will discuss later on.

How to Build a Geodesic Dome Home

With geodesic dome house kits readily available, it has become easier to construct one with the added advantage of you attempting to build it on your own. The kit consists of the main framework and the panels of the dome. It's recommended that you opt for fiber panels as they are going to be the easiest to fit. The reason being that due to the shape of the dome, regular plywood will increase the cost of construction. This is because, regular house construction materials are available only to accommodate angular fittings, such as a rectangular roof with walls. Hence, you need to select a material that is not going to need altering to fit the dome shell.

The case here being that, your initial intention of saving by building the dome will be nullified by the cutting and alterations that you perform with the plywood or something similar. Hence, using material such as fiber will help because it doesn't come in any predetermined shapes, which makes it easier for you to fit the panels by avoiding wastage. The following are a few guidelines that you can follow when you're trying to construct one on your own.

Map out a blue print of the dome in order to refer to it while constructing, as measurements need to be taken based upon the size of the dome. There is no fixed measurement, hence, you can order in the panels of your choice, and according to that, build the frame.

Make sure the surface area of each panel is a little wider than that of the frame so that adjustments can be made.

Depending upon the size of the dome, metal rods, preferably aluminum, need to be purchased and cut into equal lengths to form struts or supporting bars, which constitute the mainframe.

These rods need to then be flattened and bent at an angle at each end, in order to connect it to another strut.

Holes then need to be drilled at each end in order to screw on the nuts and bolts, that hold each strut in place with the next.

Finally, assemble the dome by attaching the panels to the framework.

This is the simplest form of a dome that you can construct.

The disadvantage that you're going to encounter is trying to get the internal fittings to match with the shape of the dome, such as the drainage, water pipes, and the wiring and circuit points. You will need to personally make sure that these fittings are custom-made for you to accommodate the shape of the house. Also make sure that the plans of the construction are handed over to the local building and construction authorities well in advance to avoid future hassles. Besides homes, another place where geodesic domes has found in use are greenhouses. Due to the transparency of the dome it's ideal for greenhouses. They work excellently in place of the regular structure that greenhouses are built of. And due to their light weight, they can even be lifted and moved if the case arises.

Advantages

Here are a few advantages of constructing a geodesic dome. They are as follows:

Due to their spherical structure, they are impervious to the elements of nature. They can stand extremely strong winds and some are even known to withstand earthquakes.

The air that circulates inside the dome helps maintain its temperature constantly, and are also known to keep the interiors warmer than conventional homes.

It is claimed that a geodesic dome helps save at least 25-30% of space that would otherwise be required by a rectangular house. This is quite an important aspect considering the rate of real estate.

Disadvantages

Of course there are a few disadvantages too that have to be considered as well, they are:

Due to the type of the material used in a dome, elements such as sunlight, smell, condensation and sound, penetrate the barrier which provides little protection against them.

It is difficult and time-consuming to try to fit the furniture and internal fittings according to the shape of the dome.

Trying to divide the space by means of walls can sometimes prove to be a major hurdle because of the absence of corners and straight flat lines to work with.

As the panels of the dome are triangular in shape, square or rectangular windows will not work, hence, you will have to make do with triangular or round windows.

However, whatever may be the case, these homes are a truly amazing invention that has changed the face and definition of home improvement and architecture. The demand is increasing as people are catching up with the concept of dome houses. Though there is some amount of expenditure involved,

it is considered to be cheaper than building a concrete ceiling. So why not be the envy of your neighbors? Go, grab a geodesic dome kit and set to work upon it to build yourself a revolutionary geodesic dome home.

Текст 6

1. Прочитайте текст.
2. Найдите в тексте интернациональную лексику. Определите её значение и переведите на русский язык.
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How to Build a Concrete Block Wall

Building a concrete block wall is not as difficult as it appears to be. Here's a simple step-by-step tutorial that will help you learn how to build one yourself. Have a look!

A concrete block wall, as the name suggests, is nothing but a wall made by stacking blocks of concrete one above the other. While it's a fact that you can build a concrete block wall yourself, you should know the steps before you start building one. Also, you need to keep a few things in mind in order to be successful in your endeavor. Wondering what they are? Well, all you need to do is just go through the article to find out...

Steps to Build a Concrete Block Wall

For constructing a concrete block wall, it is necessary to decide the type of concrete blocks that you will be using. There are many types of concrete blocks used in different constructions, such as stretchers, end blocks, rough edged blocks, cap blocks, decorative blocks, and interlocking blocks. Choose the one that best suits your requirement. First measure the area of installation and then purchase the required number of blocks. Also, estimate the amount of mortar required and purchase accordingly.

Before we move on to the steps, let us take a quick glance at the list of equipment and materials needed for building a concrete block wall.

Equipment Required
Measuring tape
Shovel
Hammer
Steel square
Corner poles
Mortar board
Masonry Trowel
Jointer
Straightedge

Materials Required
Mason's string
Lumber
Reinforcement bars
Plastic sheet
Line chalk
Nails
Wooden strips (3/8" thick)

Step 1: Laying the Foundation

⇒ Prepare an outline of the wall and wall footing with the help of the masonry string. Level the area where you'll be installing the wall. Then, dig the foundation required for the wall; the width and depth of the foundation should be twice the width of the wall.

⇒ Prepare a wooden frame using lumber around the strings, and install reinforcement bars to ensure strength of the footing. Fill the frame with concrete and level it throughout. Then, leave the concrete to cure for at least 3 days by covering it with a plastic sheet. Your foundation is ready.

Step 2: Drawing the Outline

⇒ Look at the construction drawing carefully and note the exact dimensions for the elevation and floor plans. Also, note the exact position of the openings for doors and windows.

⇒ Mark the corners as per the measurements given on the drawings, and transfer them accurately on the foundation.

⇒ Once you've marked the exact position of the two corners, a chalk line needs to be drawn across them. A chalk line is nothing but a straight line on which the concrete blocks will be placed.

⇒ Using the hammer and nails, mark points along the chalk line, so that the line can be redrawn, in case it fades away or gets wiped out.

⇒ As you draw the chalk line across two adjacent corners, don't forget to mark the position of the doors and other openings.

Step 3: Trial Run

⇒ This step is crucial before you actually begin laying the blocks. Choose any corner and start placing the blocks one beside the other, without the use of mortar.

⇒ The main purpose of this step is to allow you to check how the first level of block looks like, and whether it turns out exactly as it should, according to the floor plan. Also, you can determine how many blocks, if any, need to be cut.

⇒ The thickness of the mortar joints between two subsequent blocks should be 3/8", and this thickness should be taken into account while placing the

blocks. For this, you can use wooden strips that are 3/8" thick, and place one between each pair of blocks.

⇒ When you've done, the next step is to mark the exact location of the corners, using a steel square.

Step 4: Setting up the Corner Poles

⇒ Begin with the corners when you start laying the first level of concrete blocks using mortar. This is because perfect corners make perfect walls.

⇒ To make things easier for you, there's something called a corner pole. All you need to do, is get two such poles and fix them at two adjacent corners. The poles come in various lengths, and you can choose one as per the height of the wall that you intend to build.

⇒ Now, that you have the corner poles fixed, draw markings along the length of each pole at a distance equal to the height of the blocks you intend to use. However, make sure that the markings coincide on both the poles. (For example, the 5th marking on one pole should be exactly on the same level as the 5th marking on the other pole.)

Step 5: Laying the Blocks

⇒ Take mortar in the mortar board and spread it on the foundation, using a trowel, such that, the layer of mortar is about an inch in thickness.

⇒ Begin with the corner blocks. Take the first corner block and place it on the exact spot marked beforehand. Make sure that the thickness of the layer of mortar between the block and the foundation is 3/8". Now, place the corner blocks for the other three corners in a similar manner.

⇒ Once you've done, keep on placing the blocks one beside the other, while removing the excess mortar with the trowel.

⇒ Proceed in a similar manner for the remaining rows, spreading a layer of mortar on the upper surface of the blocks as well.

⇒ Do not place a block exactly above the block below it. Instead, place the blocks as shown in the image above. This pattern of laying the blocks strengthens the wall.

⇒ After each layer of blocks is laid, shift the mason's string to the next marking on the corner pole. This way, you can check the level of each layer as you go upwards.

Step 6: Finishing Touches

⇒ Use the jointer to scrape off any excess mortar from the joints, for smoothening the ragged edges.

⇒ Check for any gaps between the blocks. If you find any, fill them with a fresh layer of mortar.

⇒ Check the level of the top layer using a straightedge. If it is slightly uneven, use a jointer to smoothen the uneven spots.

⇒ If you find traces of mortar anywhere on the surface of the wall, scrape it off using the trowel.

How to Build a Brick Wall

Demarcate your property, enhance the patio, or simply shut out the world with a simple brick wall. You can build your own brick wall in these steps given in this article.

Building a brick wall yourself can give you a sense of accomplishment, that you can not derive when you hire a professional bricklayer. However, if you have no prior experience in masonry, then this task can be pretty challenging for you. If you plan to build a brick wall, that lasts long and withstands all the climates, then it is imperative that you learn the correct technique. No matter if you are planning home construction, garden brick wall or a veneer wall, the method and the building materials required, remain the same.

Before you begin, you need to remember that building a brick wall is not a cake walk. You would have to set aside a couple of weekends for the task to be completed. You must remember that a strong wall is based on a firm foundation and this definitely is time-consuming. Before building the brick wall, you need to mark the ground with some chalk powder.

Material Required to Build a Brick Wall

Bricks
Cement
Sand
Gravel
Bubble Level
Trowel
Spade
Hook Level

Step 1: Digging Around

Dig a trench that is 300mm deep and 300mm wide, spanning the length of the area where you want your brick wall.

Step 2: Lay the Footing

Pour concrete into this trench and push it down with a post, so as to get rid of air pockets. Let the footing 'cure' for a couple of days. Use an old gunny sack to keep the footing covered so that it sets well.

Step 3: Lay the Bricks

Place bricks at either end of the footing. Check the level of the bricks and hook a line so that it lines with the top of the bricks. Complete the first layer of bricks. While laying the second layer break a brick in half and place at two ends. Complete the layer ensuring the gaps between two bricks is maintained.

Step 4: Completing the Course

Keep a check of the level using a bubble/spirit level. Every time you start a new layer make sure you hook the line with the top of the bricks. Complete the course in a similar fashion. Remember to go from ends to the center.

Step 5: Pointing the Edges

The mortar between two layers of bricks should be pointed or shaped so that it can shed rainwater. Use the point of the trowel to point the edges in either of the three fashions – flush, concave or weather struck joint.

Step 6: Balance the Level

Stop building the wall at the height you desire. Balance the level on the wall and check the level. Allow the mortar to set and your wall is ready.

Make sure to check the level and alignment every now and then to get a straight and even leveled wall. When the mortar has set but not hardened, tool the joints of the bricks, so as to get a smooth finish. Do remember to moisten the wall till the cement filling harden up.

Текст 7

1. Прочитайте и переведите текст на русский язык.
2. Составьте план текста.
3. Перескажите текст на английском языке.

House Framing Tips

The various frame house plans are drawn up to ensure that once the framing work begins, it progresses quickly and the resources are easily accessible. Abiding by the house framing tips shared by the professionals gives the home owner the opportunity to optimize material and time.

The most important tip to the modern home owner to be organized! It is essential to preplan the whole exercise and keep updated track of the transactions and trade involved in the framing requirement. This includes the correct assessment and timely assimilation of the required material to complete the job on hand. It is essential to strike an understanding with the local lumber yard owner or the in-house executives. This is with the intent to ensure that all the material required is delivered on time, including some of the extra trusses and window and door frame requirements. Mechanical requirements should also be taken care of simultaneously. Apply for a Gas Meter, if the work is extensive and also plan out the desired alterations, especially if they are absolutely necessary to the framing solution. Preplanning will always save you money, time and effort later. Settle only for the best deal possible within your budget.

Consider the use of a crane to lift the trusses to the roof and to lift heavy items that need to be stacked within the home prior to the work. You should carefully plan the installation of large items like bathtubs and heating system before the plumbing, since the work only becomes messier and damaging to the property if not in sequence. It makes sense to place the cabinets to be installed and mark the heating and plumbing jobs beforehand. Prior to electrical and plumbing undertakings, it is better to double check for squeaking pipes and fittings. Do not attempt rewiring of the telephone cables, if there is a shift in placement. It is better to abide by the telecom rules and call in the telephone and cable company experts to install the required wires.

You should tie up with the window and door suppliers, to ensure that these essentials are delivered as soon as the professional framers complete the roof. This will enable timely and systematic execution and installation of the doors and windows and completion of all the framing at one time. Double check the price quoted for the window and door fixtures. It should include the cost of the screen and the security locks. You must be well-versed with the professionals and authorities who are designated to look into the house framing components. While the plumbing and heating jobs accomplished at home will be inspected by City Hall authorities, the Provisional Inspector will ensure that the electrical system adheres to the set standards and the Building inspector from City Hall is in charge to inspecting the work and reporting discrepancies, if any. The inspections are with the sole intention to ensure that the home is safe for you to live in.

Types of House Framing

The two basic methods include the platform method and balloon construction. While the platform construction method is common, the balloon framing option was quite so in the early half of the 20th century, employed in many of the grand two-storied houses. In both the framing types, the wall studs and ceiling and floor joists are repeated over every 16 or 24 inches of the frame. This feature enables a standardized layout that optimizes floor, ceiling and wall material being used and eliminates waste. The spacing of the wall studs make exterior walls stronger and enable the electrician to access a larger cavity for thorough wall insulation. The exterior wall sheathing feature not only adds strength to the overall structure, but also provides the structure a flat base for a superior exterior wall finish.

Sheathing options are available in diagonal plywood or similar composite panel sheathing. The exterior roof sheathing is either made of plywood or oriented-strand board panels. In the platform construction, the walls are set on the sub-flooring and in the case of multistoried houses; each floor provides a platform for the next series of walls. In the balloon framing method, the studs are the basic frame holders and hence the structures that adopt this type of framing shrink and settle more uniformly.

Текст 8

1. Прочитайте текст.
2. Найдите в тексте интернациональную лексику. Определите её значение и переведите на русский язык.
3. Перескажите текст на русском языке.

Craftsman Style Homes

Built from the 1900s to the 1930s and renowned for its simplicity in building and maintenance using locally available raw material, Craftsman style homes are gaining in popularity once again.

Craftsman style homes were built in America from the early 1900's during the American Arts and Craft movement. This was a time when the industrial revolution was at its peak and America had a rapidly rising middle class population.

The Craftsman style home is attributed to designers such as Gustav Stickley, Henry Mather Greene, and Charles Sumner Greene. They were all a part of the American Arts and Craft movement, and the Craftsman home became a natural extension to the art and furniture that they then created.

The Craftsman style home borrows heavily from the bungalow style home which has its origins in India. The British are attributed with designing bungalows in colonial India.

Characteristics of these Homes

These homes can be recognized by their unique and typical shape. They are usually 1 to 2 stories high and very simple in construction, lacking all the fanciful ornamentation that would be found in other home styles such as Victorian homes.

Typical characters of Craftsman style home will include the following.

– Front, side, or cross-gabled, low-pitched roofs
– Decorative braces / beams under gables
– Simple doors and small windows grouped into 4 or more
– Wide overhanging eaves with exposed roof rafters under them
– Huge front porch with thick square pedestal-like tapered columns supporting them
– Built with a mixture of locally available materials such as wood and stone
– Heavy use of wood for building the home and furniture
– Cross-members and roof beams usually exposed inside the home

Advantages

A Craftsman style home is usually built for an entire family and is designed as per the requirements and tastes of that particular family.

Almost all the raw materials used during construction (internal and external) are available locally. Wood that is locally available is used for the home construction, and used internally for staircases, cupboards, furniture, beds, and cabinets. These homes are very strong and require practically no maintenance.

Since the Craftsman style home is uncomplicated and easy to envision, draw and construct in a short period of time using locally available material, there is a huge cost advantage.

Elements of these Homes

There are certain elements that go into building a Craftsman style home and are common to all such styled homes.

– Porches - usually full-width with street-side facing gable within its roofline

– Roof planes - usually gable, hip and shed configurations

– Roof-overhangs - usually 2 feet or more supported by triangulated brackets, supported by exposed beams and rafters

– Trimwork - usually of almost similar width for rake, and exterior casings

– Exterior clads - usually of similar or different natural materials that are available locally

– Columns - thick and heavy, right-angled corners, usually flared downward

– Foundations - usually masonry used and flared downward

– Windows - usually small and grouped in sizes of 4 or more

– Steps and staircases - usually of solid wood

From the Inside

The inside of any Craftsman style home will have a square appearance. Rooms are usually uncluttered and spacious. Ornamentation is either missing or to its bare minimum.

The fireplace is in the living room and usually made of brick and tiles, and framed with symmetric benches or bookshelves. Windows are small and in groups of 4 or more and are made of wood and plain glass or stain-work, allowing the entire home to be well illuminated. Heavy ceiling beams are visible throughout the home.

In a maximum number of these homes the living room with fireplace, kitchen, dining, and storeroom are on the first story, and the bedrooms are located on the first story, connected by an internal wooden staircase.

Many today are leaving their apartments in multistoried buildings for a more traditional and comfortable Craftsman style home.

Retaining Wall Construction

Home décor is now extended to the exteriors of the construction, too. Retaining walls optimize the space available outdoors and help you landscape with a difference.

The property markets world wide now demand a new approach towards the upkeep of existent property and the upgradation of a recent investment. It has

become very essential for modern homeowners to incessantly indulge in ways by which the property value increases. Before you attempt expensive interior designing or renovation, you could, or rather should consider increasing the value of the property by enhancing its curb appeal. This can be successfully attempted by accentuating the exteriors with planned landscaping and retaining wall construction. The addition of a retaining wall has been considered and successfully attempted by many homeowners on account of the adaptability of design and the practical uses.

It is important to note that there are basically two types of retaining walls. The non-reinforced walls depend on the weight and material to resist any kind of load. On the other hand, the reinforced walls are made of geo-synthetic reinforcement material. The wall construction not only adds to the look of the adopted landscape, it also helps to control precious soil erosion. The retaining walls are aesthetically pleasing and decorative. Homeowners now prefer the tiered retaining walls because they spruce up the exterior and add value with the interconnected terraces that are the outcome of the design.

Now, homeowners who wish to indulge in retaining the wall have a new accessory unit to consider, the Highland Stone. This feature offers the chosen design a face texture similar to that of natural stone. It can be an experiment with prearranged patterns or a random placement. How to build a retaining wall? Well, the project involves planning, evaluation of the site features and installation of the wall design chosen. Prior to everything, you need to plan thoroughly. This requires a detailed plan of the site layout. The site plan should include the location, length, elevation, utilities underground and water management.

Retaining wall construction also needs design soil information and a plan. The latter is a blueprint of the wall and when creating a plan, it is important to consider the expertise of an engineer. The engineer is the best person to determine the quantity and type of material required to stabilize the retaining wall. The engineer is also equipped to give you sketches on how to build a retaining wall. The use of geo-synthetic reinforcement for the retaining of a wall depends on its height, soil conditions, etc. The next step involves on-site evaluation to double check for material and safety.

When getting down to the task, you need to take steps to protect the material you have invested in from the surrounding equipment, if any. You also need to set aside a storage area for the block, reinforcement and the base materials. Create a space for the subsequent drainage and check the material carefully. The investment is not a small one and hence, you need to ensure that the material delivered is the material paid for. You can elevate the blocks to keep the reinforcement material dry and covered. This requires you to follow the set guidelines and work paradigms for essential job site safety.The guidelines are established by the Department of Labor and should not be flouted.

You need to maintain safe inclines and co-ordinate with the foreman. This enables you to understand the presence and location of the different underground utilities. The process is now enhanced by the accessibility to applicable technology and innovative material and designs. The latest is a special process called global stability analysis. This technology actually enables you and the foreman to successfully analyze the projected stability of the retaining wall even before construction! With a little planning and research, you can be assured of the construction of a retaining wall that accentuates the exteriors of your home.

Текст 9

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International Building Code

There are special International Building Codes or IBCs that are applicable within the dedicated industry world wide. The building code is designed for use as a model internationally recognized and is specially developed by the ICC or International Code Council.

The codes are widely used in the United States of America. The system that was established within the dedicated fraternity in the 1900s, is a system of building regulations developed by three regional code groups. The special building codes were developed by the BOCAI or the Building Officials Code Administrators International based in the East Coast and throughout the Mid West regions, the SBCCI or the Southern Building Code Congress International in the South East and the International Conference of Building Officials or ICBO in the West Coast. The special regional International Building Code (IBC) has been effectively applied and very responsive to the regulatory demands made by the various local jurisdictions.

By the early 1990s, it was more than obvious that there was the specific need for a single and well coordinated model codes acceptable on a national level. The three model code grouping authorities then combined their individual efforts into establishing the International Code Council in 1994. The effort and aim was driven towards develop ICC codes that would not be limited by regional restrictions. It took extensive research and three years of dedicated effort towards development before the first edition of the International Building Code was published in 1997. The IBC was developed on the basis of the three legacy codes that were previously developed by the BOCAI or the Building Officials Code Administrators International, the SBCCI or the Southern

Building Code Congress International and the International Conference of Building Officials or ICBO, the organizations that constitute ICC.

ICC has successfully completed the International Codes series by the turn of the century and now the development of the legacy codes has ceased. It is important to understand that the NFPA or the National Fire Protection Association, who is also a large contributor to the model code development project is absent in the endeavor. Initially, the National Fire Protection Association was a part of the endeavor of the ICC, to collectively develop the International Fire Code. However, the effort fell apart and subsequent efforts to reach any form of coordination have been unsuccessful. The NFPA or the National Fire Protection Association's attempt to establish a competitive building standard series has been opposed by the AIA or the American Institute of Architects and the NAHB or the National Association of Home Builders.

The IBC and the National Fire Protection Association effort to contribute to and save the development of the unified set of building model codes have failed. The result of the continuing aggressive push for adoption of documents and the unwillingness to cooperate on a single national building code is that the local governments and the dedicated construction and real estate intensive industries are confronted with this 'Battle for Code Supremacy'. The most extensively covered building concern within the International Building Code is that of effective fire prevention. The conditions differ though, from the related IBC code for efficient fire protection measures. The latter elaborates on construction and design details to handle fire prevention on a long-term basis.

The building code would ideally deal with the exact location of the emergency exits and the essentials of the fire code to ensure that the emergency fire exits are maintained unblocked. The building code also elaborates on blue print details with regards to access for the disabled and stability of the structure to deal with tremors and violent external forces. When any municipality adopts the IBC, it automatically also adopts the sections of the other reference codes like essential plumbing, mechanical and electric codes that are recognized by the IBC. The chapters include specifics on building heights and occupancy classifications, interiors and foundation and roof construction, fire protection systems, building material and incorporation of elevators and escalators within the structure. International Building codes are generally applied to new constructions and alterations or additions. Many a time, changes in the use of a building expose the entire structure to adopt the code.

Текст 10

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2. Найдите в тексте интернациональную лексику. Определите её значение и переведите на русский язык.
3. Перескажите текст на русском языке.

Modular Home Prices

There are a myriad of modular home plans and designs to choose from. The prices of these are mentioned.

Plans

The Chalet designs have picturesque exteriors, large glass areas and dramatic rooflines. These are perfect for an array of surroundings like waterfront locations, wooded areas and mountain settings. There are different home plans like Clifton, Ocean View, Deercroft, Mount Airy and Timberlake. In the Split level homes there is a flexibility of four separate living levels and in-line or traditional rooflines. Beach Haven, Glenn Haven and Spruce Haven are the different home plans. The two-story selection has a large variety of styles and layouts that may be traditional or colonial or contemporary. The two-storey homes have the ability to interiors and exteriors to suit any taste and add garages and breezeways. The different floor plans are Elder, Hickory, Juniper, Magnolia, Mulberry, Sycamore, Shearwood, North Hampton, Hartford, Dutchess, Montgomery, Glen Manor, Laurelton, Rosedale and Lansdale. Ranch home plans are of various types like Ashwood, Chestnut, Dogwood, Hemlock, Locust, Redwood, Spruce, Laurel, Crestview and Fairview. Cape home floor plans are of different types like Cape Carolina, Cape Romain, Cape Charles, Cape Rose, Cape Cod, Roanoke, Fredericksburg and Cape View.

Prices

Modular homes cost twenty- to forty- percent lesser than site-built homes. The cost savings occur in labor and materials. The prices of modular houses are in between mobile homes, that are lowest and site-built homes that are highest. Manufacturers of such constructions deliver good quality at low cost. A purchase department provides for all the raw materials and fittings. For the purchase of such homes, loans are given at lowest rates and optimum terms. The price of a modular home changes as per the building lot and the size and style of house. As on February 2007, the different approximate prices for the various aspects are as follows: Site engineering that involves dig test pits, design septic plan and submit plan to State for approval is about $1000. Excavation for foundation, septic system, build driveway, grade disturbed areas and spread loam are $30,000 on an average. Well includes drill well to 400', install pump and pressure tank and bringing water line to basement is nearly $7500. Electrical

hookup comprises installing 200 ampere panel and hookup electrical system to service is $3000. Building permits which includes procuring building permit from town costs $500. Foundation or basement that sets forms, pours footings and walls and pours basement floors is valued at $10000. Plumbing or Heating hookups is estimated at $12000. This includes hookup gas or oil fired boiler and hookup all plumbing and heating lines. $3000 is the cost of Interior button-up that includes installation of interior doors on marriage walls, building basement stairs and touch-up drywall. Decks or porches is also $3000. Landscaping costs $1000. Installation of walks, plant grass and shrubbery are the different items.

Designs

There are different modular home designs like single family homes, condominiums, offices and commercial buildings. There are more than 8000 custom designed homes and commercial structures. The various designs are distinguished into the following series : Executive, Presidential, Atlantic, Liberty and Vacation. Each of these are further divided into sub-types. For example, Executive Series comprises Victorian, Two Story, Gambrel, Cape Cod and Ranch. The Presidential Series has Two Story type. The sub-types are: Lincoln

Washington

Adams

Jefferson

Atlantic Series is made up of Two Story, Gambrel, Cape Cod, Split level, Bi-level and Ranch. Liberty series is two story and includes different categories like: Patrick Henry

John Hancock

Constitution II

Ben Franklin

Constitution

Independence

The Vacation series sub-types are: Hampton

Rock Harbor

Oak Harbor

Adirondack

Blue Ridge

Pocono

The size and versatility of the production facilities enables to build a highly-customized and economic modular building and systems built home. The perpetual hunt for new material, technology and manufacturing techniques, displays the commitment to provide customers with the optimum output.

Текст 11

1. Прочитайте и переведите текст на русский язык.
2. Составьте план текста.
3. Перескажите текст на английском языке.

Step by Step Process of Building a House

Building a house is a lengthy and complex process. It requires a lot of patience, labor and money. Proper planning, and following every process of building, can not only ensure the maximum utilization of one's resources, but also get the house built that best suits one's taste and needs.

A house isn't just a structure of concrete and mortar. It is a place where we find peace and rest after a long day's work. We all dream of owning a house some day and a lot of planning and saving goes in, building it. However, building a house is a complex and time-consuming task. Following a step by step process of building one's house is the best way to minimize the hassles, that may arise in the process, and be well prepared for any unwarranted crisis that may crop up.

Steps for Building to Houseplan your Finances

Money is an important factor in deciding the design, size and layout of your house. Deciding on your budget is a great way to begin. Judge if your budget is suitable for the design and size of your house. If not, see if you could apply for a home loan or a mortgage. You could also consider modifying your building plan to suit your budget.

Choose a Lot

Choosing a lot is the next important step. However, some go for drawing up a house plan as the second stage. Although both the approaches have their own merits, the fact remains that a house plan can be altered according to the landscape, but changing the landscape to suit the plan is not possible. Thus the merits lie in choosing the lot before deciding on the plan. In addition to this, the builder or the architect that you hire needs to evaluate factors like soil condition, drainage and the building code of the area before any construction work can be started.

Choose the Right Professionals

After you have decided on your budget and lot, it's time to choose the right professionals to build your house. That would include the builder, the surveyor and the architect. Once you chose the builder, it is usually that he chooses the rest of the team. However, you could hire the architect of your choice as well.

The House Plan

While deciding on a plan for your house, it is useful that you consider your needs and lifestyle. If you plan to work from home, having a workplace is important. Are you one who loves the sun and fresh breeze? Then a house with wide windows and patios would be prefect for you. You could opt for a stock plan from a catalog, that has plans for houses or you could get a customized plan for your house. For the latter you will however require a licensed architect.

Decide on the Building Material

Building materials commonly used for constructing a house, vary from lumber to concrete, plaster of Paris, aluminum and glass. If you are lucky you may get a list of building materials along with your house plan. If not, then try to select materials that are locally available, as it would also prove more congenial to the local climate.

Draw a Contract

After you have finalized the lot, plan and the team that would build your house, draw up a contract with the builders and the architects. The contract includes all the agreements (like the start and the completion date, labor cost and any other charges and warranties involved in the process), drawn between you and the professionals that you have hired.

Apply for the Permit

Finally you should apply for a permit to build your house and though getting it takes time, it always helps to get prepared to start construction of the house. For example, you could apply to the electric company to provide you temporary electricity to run the appliance required to build your house.

Despite all the steps you follow, there is always the unpredictable weather. Again sometimes your electrician might not turn up or may be the developer would want to make some changes to your plan that you wouldn't like. Such hurdles might always come, but it always helps to plan beforehand and to be prepared to handle all situations that may come up while constructing your home.

Текст 12

1. Прочитайте текст.
2. Найдите в тексте интернациональную лексику. Определите её значение и переведите на русский язык.
3. Перескажите текст на русском языке.

House Framing Instructions

Framing a house forms an important activity in the process of construction. The house framing instructions that one needs to follow are mentioned below. If one takes care of the necessary house framing details, the resulting structure of the house proves to be strong and long-lasting.

A house frame is nothing but a skeleton that supports the structure of a building. A house framing design includes the proper arrangement of floor joists, wooden beams, roof rafters, wall studs and other related components. The above mentioned building materials form the basic framework. The frames used in construction form the backbone of a house. Framing needs to be done carefully, in order to avoid doorways from becoming crooked, sagging roofs and many such problems. A house framing plan should be such that all the above mentioned problems are taken care of. Wood house framing is the most common type of framing used; however, steel framed houses are getting popular nowadays.

Framing a House

The various framing activities included in the construction of a house are making the doors and window openings, setting up rim joists, beams, sill plates, floor joists and deck fastenings. The materials used for framing, range from wood, like the pine and hemlock, to steel, bricks and concrete. Wood is commonly used in the construction of frames because it is cheap and easily available. However, if one wants to build a durable frame that supports weight, materials such as steel, concrete or bricks should be used. To use the above mentioned materials, the accessories and required equipment should be gathered in advance and a proper plan should be formed. The tools required for the framing process include the speed square, framing square, carpenter's level, hammer, tape measure, chalk-line, plumb-bob, reciprocating saw, circular saw, scaffolding and ladders.

The construction or the assembly of the frame, should be done by following the necessary steps. Although the construction process might seem tedious and time-consuming, following the codes ensures that a safe and secure framework is built. Ignoring the codes in the process of sizing and fastening might lead to serious consequences. The beams that support the structure of the house should not be disturbed during the reconstruction or remodeling activity.

House Framing Instructions

Before one starts the framing activity, he should be aware of the necessary permits and codes that are to be followed. The codes for the construction of a frame are of two types: building code and the fire code. The building codes define the dimensions of different features such as the height of the ceiling, hallway width, doorways, etc. Rules and regulations regarding the size of windows come under the purview of the fire code. The framing construction goes through many different checks and inspections before being approved. Any waver in the prescribed rules or codes might lead to a violation and eventually a fine. In some cases, the whole construction needs to be redone if it doesn't pass the necessary codes.

House Framing Details

Following is the list of activities that one should carry out so that one doesn't miss out on the house framing details. One should make sure that all the connections are made properly. The framing work that is in progress should be supported by braces until the construction gets over and all parts of the frame are fixed firmly. Carrying out an inspection of the constructed frame is essential and failing to do so, is termed illegal. The home insurance might get nullified or become void, if the owner fails to abide by the rules. It is a common practice to use the 2" by 4" wood for construction. However, the usage of 2" by 6" wood has many more advantages like the creation of a wider space for duct work & pipes and sound insulation.

Taking the advice of a professional or consulting an expert and following the above mentioned house framing instructions makes the framing activity a lot easier. House framing can thus, become an interesting activity if carried out properly.

Текст 13

1. Прочитайте и переведите текст на русский язык.
2. Составьте план текста.
3. Перескажите текст на английском языке.

How to Build a Wood Deck

Wood deck construction requires a lot of dedication, besides the technical know-how. There are a variety of treated woods, one can choose from to build a wood deck. To learn about wood deck construction, read on...

A wood deck is an extension of a house, either for the backyard or the front yard. A deck can be an excellent place to relax, or even entertain friends. Building any part of your home brings a lot of satisfaction and joy, especially

when it is well-used and praised. Try your hand at wood deck construction; it is easy and can be completed in a matter of few days.

Constructing a Wood Deck

Wood Deck Plans: The foremost thing to be done for building a deck, is to make a plan. The plan should include a couple of things like location, need, etc. Plan your location by deciding which side of your home you would want it to be built. Keep in mind the privacy factor, if that is what you are looking for. Understand the limitations of your property, and decide on the size of the deck. There are some legal requirements that need to be looked into, before starting the wood deck construction.

Wood Deck Design: Budget is another important consideration that helps one design the deck. The size, type of wood, construction tools and other changes that would be required, to build a wood deck, will be all determined by the budget. There are basically two major types of deck designs one could choose from; attached or unattached decks. An attached deck is like an extension of the house, that can be directly accessed from the interior of the house; whereas, an unattached deck can be built anywhere in the yard.

Tools and Materials: There are many types of treated wood such as cedar, rosewood, etc. available for construction of the deck. One can pick cut-to-size wood panels, or saw them out. Besides, the wood one would require the following things:

100 foot measuring tape
Drawing paper and pencil
Ruler
Strings
Hammer
Nuts and bolts
Concrete
Shovel

Wood Deck Construction: Using a shovel, dig holes in the ground for the concrete piers. Keep measuring for height, as you don't want an uneven deck! Dig the holes straight, until you reach stable, undisturbed soil. Place your support ledgers (wood that will hold the deck) in these holes, and pour concrete. Let the concrete dry up completely. Install the beams by bolting or nailing them into place. Once the beams are in place, it is time to install the joists. Be careful, while determining the size of the joists, as undersized or over-spaced joists will bring the deck collapsing down. Once the outer structure of the deck is ready, nailing the deck panels is easy. Start placing them from the wall side, and continue towards the opposite side. Add deck railings last.

Wood Deck Coatings: Coatings are applied to protect the deck and preserve the wood. Most wood panels are made from pressure-treated wood. Wood deck coatings are water and rot repellent, and even come in a variety of colors. One

can apply them using brushes, rollers, or sprays. While applying, one should not overdo it, as that would make the deck's surface sticky and waxy.

Once the deck is ready, add plants, rocking chairs, tables, or swings to add to its style quotient. Once you have understood how to build a wood deck, you will realize the construction is easy and can be a lot of fun, if you get family and friends to pitch in!

Текст 14

1. Прочитайте текст.
2. Найдите в тексте интернациональную лексику. Определите её значение и переведите на русский язык.
3. Перескажите текст на русском языке.

Natural Stone Retaining Walls

Retaining walls are built to hold back soil / rock, to prevent erosion and to give sloping land a vertical support. Natural stone is most commonly used for building retaining walls. Read on to know more on them...

Retaining walls are usually built to prevent / control soil erosion, manage downfall of water or just for landscaping. Retaining walls can be made from different materials, like, natural stones, concrete blocks or boulders. Basically retaining walls are used for structural purposes, like, leveling or giving height to a slope, preserving the grade of soil around a tree or improving the outdoor landscape. There are various ideas for retaining walls, like, anchoring, gravity, cantilevered, soil nailing and many more.

Retaining Walls of Natural Stone

Natural stone retaining walls give the outdoor landscape a natural, classic and timeless look. They are constructed from stones that are cut in proper shapes and are placed without using any adhesives to hold the stones together. The wall stands with the stones stacked upon each other in a specific pattern. This method is called the dry wall or dry stack stone retaining wall. Natural stones fit into any type of yard or garden. There is a wide variety of natural stones and hence they always make a better option for retaining walls. How to build a natural stone retaining wall is discussed below.

Building Stone Retaining Walls

Building a natural stone retaining wall is quite a laborious job and requires engineering skills. The wall requires a lot of time to build if the area to be covered is large. For larger walls, one should always hire a professional. You can follow the steps given below if you want to build a small natural stone retaining wall.

Step # 1: Before you start constructing a natural stone retaining wall, check out the local construction codes. Usually retaining walls of height 3 feet or less is allowed to be built. This is to ensure that you do not break any of the construction laws.

Step # 2: Figure out the area where you want to install the retaining wall. Then order the number of stones and other retaining wall materials required, by measuring the length, width and height of the area. Remember the width of the retaining wall should be half of its height and there is no use of any adhesives in this construction. As mentioned earlier the height of the retaining wall should be less than or equal to 3 feet.

Step # 3: Selection of stones to be used is an important job. Choose the stones that have two flat surfaces. These flat surfaces are used as base and top when placed in the wall. Use heavier stones for a good strength of retaining wall.

Step # 4: Once you have selected the stones and decided the area for your retaining wall, start digging the area. Dig the area in a trench form and see that the width of the trench is a bit more than the width of the stones or half the height of the wall. The depth of the trench should be about 10 inches, such that the first layer of the wall occupies this area. The trench area should be uniform in level.

Step # 5: Start laying the first layer of stones in the trench. This will act as the foundation of the natural stone retaining wall. Tap the stones with the help of a hammer to ensure that all the stones of first layer are at a uniform level. See that you use larger stones for this layer of the retaining wall.

Step # 6: Lay the remaining layers of stones to make a retaining wall. To maintain the stability of the natural stone retaining wall, it is necessary that the rows counter balance each other. Ensure that the stones interlock each other while placing them in rows. Check for the level after placing each stone. Continue the laying of the stones until you obtain the desired height.

Step # 7: Once you are done with the laying of all the rows of retaining wall stones, it's time to fill the rear end of the wall with soil. Backfill is necessary to increase the strength of the natural stone retaining wall and it also provides safety. Level the backfill properly.

Constructing retaining walls with natural stones can be a DIY job with help from an expert. These walls not only give an elegant and praiseworthy beauty to your outdoors but also helps you to deal with geographical conditions.

Текст 15

1. Прочитайте текст.
2. Выпишите терминологическую лексику и переведите с учетом контекста.
3. Составьте аннотацию текста.

Luxury Modular Homes

The concept of using luxury modular homes is gaining popularity due to the ease of assembling, transportation, and the low cost of construction.

The reasons behind luxury modular homes becoming popular is the simplicity of the construction process, low costs incurred on such homes, and other factors like durability, ability to survive adverse and harsh weather, etc.

What is a Modular Home?

The modular homes are a good alternative to the traditional homes, and they save cost, time, waste generation, etc. The modular homes are assembled from parts or units known as modules. The modules are prefabricated sections that are transported from one place to another, and thus it eases the process of building a house. Earlier, people didn't show much interest in building modular homes, since their quality was not up to the mark. Nowadays, modular homes show great variety and additional features in their construction. Modular home construction utilizes materials that are strong and remain unaffected by weather changes while building them.

Luxury Designer Homes

The modular homes have changed with time and one can add luxury features and designs in the structure of these houses. The basic structure or framework of these luxury homes remains the same, however, variations in designs implemented by architects and other accessories prove to be the distinguishing features of such homes. The techniques used for constructing modular homes and the material used in the process give them an edge over other types of homes.

Construction Process

The process of constructing modular homes takes less time as compared to the conventional ones. The average time required to build such homes is around 12 months. Most of the construction/assembly work is contracted to third parties. Bad weather is not the limiting factor in building modular homes. These homes could also be made strong enough to resist harsh weather and even hurricanes. One such home built in Hubert, NC is a perfect example of versatility and durability. This luxury house built by 'Handcrafted Homes', Henderson, NC, can resist wind speeds up to 130 mph. The various luxury

features included in this house are an elevator, Hardie plank sliding, glazed kitchen cabinetry, etc.

Custom Designing

The Computer Aided Design (CAD) software available in the market allows the customers to create custom designs for their future homes. It eases the work of manufacturers, since the specification provided by customers helps in planning their work. The features like skylights, whirlpool tubs, vacuum cleaning, bay and bow windows, etc. could be included in the construction of these homes.

There is a lot of scope to embellish and decorate these luxury homes. One can decorate modular houses with hardwood floors, granite-topped kitchen tops and many such things. The homes could be scaled up to big sizes and the spacious 4000 sq. ft houses are a nice example of such grand homes. The modular homes are far different from mobile homes, which emphasize more on the factor of portability. The modular homes on the other hand make the task of construction easier by assembling the components.

Luxury modular homes are thus a nice option in comparison to the costly conventional homes which not incur higher costs on the part of customers, but also consume a lot of our time.

Текст 16

1. Прочитайте текст.
2. Выпишите терминологическую лексику и переведите с учетом контекста.
3. Составьте план текста.
4. Перескажите текст на английском языке, используя термины.

Concrete Block Retaining Walls

The construction of concrete block retaining walls is easy, and thus is suitable for those who want to carry out the construction work all by themselves.

A retaining wall is used for many different tasks such as preventing soil erosion, creating tree borders, leveling patios, giving steep hills a terraced form, etc. The advantage of using concrete blocks is that they are long-lasting, easy to install, widely available, reasonably priced, and available in different patterns and colors. You just make sure your building materials are of good quality.

Getting Started

One should first decide how many blocks would be sufficient for building a wall. It should be kept in mind that the curved walls require more blocks than the straighter ones. In order to cut the blocks accurately, a line needs to be

marked around them with the help of a 3½ inch brick chisel and a sledgehammer. The chisel should be placed exactly at the center of the marked line and the sledgehammer should be struck sharply.

To build a retaining wall that is 4 feet in height, a trench accommodating a 4-6 inch compacted base and 1 inch leveling sand should be dug. A shovel should be used to dig the trench. The leveling sand and the compacted base covers the first layer of concrete blocks to the half of its height. The next step of concrete blocks, i.e. the one which is placed above the basal layer should course back about ¾ inch. The vertical joints should overlap at least 4 inches. The rows of concrete blocks should be secured to each other with the help of pins. The back portion of the wall should be filled with crushed rock. The top portion (6 inches) should be filled with a 'cap' of native soil. It keeps the surface water from entering the trench.

Working of Concrete Block Systems

The concrete blocks used to build retaining walls have a lip on the bottom. These lips help in locking the blocks together; which further results into the formation of a step-like structure. The cavity between the blocks is filled with soil. It pushes the blocks forward, and in turn strengthens the joints between the lips and the blocks that lie below them.

Qualities of Good Retaining Wall Blocks

The retaining wall blocks should be strong enough to meet the demands of difficult terrains. The retaining walls constructed from the blocks should be flexible, versatile, and must cater to the unique needs of every new project site.

Advantages of Using Concrete Blocks

The concrete blocks used in retaining wall construction interlock with each other and do not require mortar. These blocks are easy to assemble and could be dismantled easily if the need arises. The walls built using concrete blocks help in creating a system of terraces which is also pleasant in its appearance. These concrete walls provide an opportunity to create landscapes.

The different types of retaining walls use different materials for their construction. Building retaining walls with the help of concrete blocks is a better option over using other materials. The concrete block retaining walls are thus a good choice to create a pleasant landscape and a strong construction.

Текст 17

1. Прочитайте и переведите текст на русский язык.
2. Составьте план текста.
3. Перескажите текст на английском языке.

How to Build Brick Steps

Bricks give an attractive look to the patio or entryway. However, building with bricks is a tedious job. Here are the steps that will guide you on building brick steps.

A brick stairway is a durable option in the patio or at the entrance of the house. These brick steps render a traditional look to your house. Although, they are elegant, there is a lot of skill and knowledge required in building brick steps. Building a quality stairway that will last for long is important. To construct a brick stairway, proper construction material and skill, are the two basic requirements.

- Materials Required to Build Brick Steps
- Bricks
- Trowel
- Mortar
- Cement Mixture
- Shovel
- Measuring Tape
- Fine Sand
- Nails
- Hammer
- Water
- Level
- 2"x6" stock (Foundation pad)

How to Install Brick Steps

Step 1

The foremost thing to be done is to prepare a layout of the number of steps that you need to build. This will give you an idea about the amount of bricks, mortar and cement mixture that you will require to build the steps. Another estimate that you will have to do is the dimensions of the stairs.

Step 2

With the help of a level, level the soil under the foundation of the brick stairs. Place a 2"x6" stock as a foundation pad. The cement is mixed according to the instructions that are given on the cement bag.

Step 3

The next step is to build a frame of the brick stairs. With the help of a level, lay cement of about 1 inch between two bricks. It is not necessary that you use expensive bricks for this first course of the stairway. Ensure that this first course is leveled properly. This completes the interior brick frame of the brick stairway.

Step 4

The next step is to mix the cement as per the instructions given on the cement bag. It is recommended that you use Portland cement for the construction. This cement stands well against the harsh weather conditions especially rains. After mixing the cement, it is time to place the face bricks on the first course that we have built. The face brick is that brick that is visible on the step.

Step 5

While placing the face brick, you will have to build a tread. When building a tread on the stairway, it is important that the tread comprises a pitch. Building a pitch is a crucial step in building the brick steps. The pitch allows water to run off the steps.

Step 6

After the tread, the riser bricks are to be placed. There is a thumb rule when you lay the bricks. The rule is, that you have to provide space between two bricks so as to fill this space with mortar using a trowel. Lastly, the excess mortar is removed and this ends the procedure of building brick steps. You can also add a railing to these stairs.

This was all about building brick steps. I hope this will help when you decide to build them in your patio or entrance.

Текст 18

1. Прочитайте текст.
2. Найдите в тексте интернациональную лексику. Определите её значение и переведите на русский язык.
3. Перескажите текст на русском языке.

Railroad Tie Retaining Wall

A railroad tie retaining wall can be constructed to decorate your backyard, besides flowers and plants. With the easy-to-install instructions given in the article, you can enhance the appearance of your backyard. Read more to find out how.

For those who are unaware of what a railroad tie retaining wall is, these walls are made with evergreen railroad ties. The wood is saturated in a preservative called creosote which is also used on telephone poles. Even if the

railroad ties are completely or partially buried in soil, they can last for decades. Installing this type of retaining wall in your backyard not only gives your yard an aesthetic look, but it also helps to stop an existing hill from sliding. With this retaining wall, you can use up any empty spaces in your backyard and provide it with a new look. A retaining wall is perfect for backyard landscaping ideas, as the wood is sturdy because it comes from real railroads, the color is neutral (no worries about disturbing your yard's overall appearance), and have exceptional stability.

Building the Retaining Wall the Right Way

Before you even consider the idea of how to build a wood retaining wall, visit your community's building department to check if you can go through with the project. Many construction codes need a permit before any structure (weight and height wise) can be erected. If the slope in your backyard requires a higher wall (some codes only permit walls up to 3 feet), you can hire a landscape contractor. If you'd like to handle this home improvement project yourself, you can just terrace the slope with 2 or more lower retaining walls. This way, you can give the entire wall a creative look.

Now comes the part where we'll discuss the tools needed for the railroad tie retaining wall construction. Following is a list of all the tools and materials you'll need for this project.

Railroad ties, salvaged
½ inch diameter reinforcing bar, 16-inch & 18-inch
Chain saw
Deadman anchors
Landscape fabric
Level
Gravel
Shovel
Drill
Gloves

Step #1: To order the correct amount of supplies required, measuring the correct number of railroad ties is important. To get an estimate, you need to measure the number of linear length in feet and the number of ranks that you require. Let's say if the wall is over 2 ranks tall (linear feet), then you will require deadman anchors about every 8 feet. You also need to account for the errors, warped ties, and cut ends while measuring.

Step #2: Make sure you wear gloves at all times while working (the wood is chemically treated, has rough edges, and splinters). The amount of reinforcing bar required needs to be measured. To tie the ends of each railroad ties with the bottom ones, you'll require the 16-inch pieces, and to tie the ends of the bottom ties to the ground, you'll require the 18-inch pieces. Before you bury the 18-inch

pieces of reinforcing bar, place it perpendicular at the far end. This will keep the deadheads from sliding out of the ground.

Step #3: To start building the wall, you may be thinking about different settings and placements. For more ideas, you can go online and browse through images in order to find creative ideas. This way, you'll have an understanding of how you should go about it, instead of stopping and wasting time thinking about it.

Step #4: From the current slope in your yard, remove the soil by digging it further away from its original place. The reason, when your retaining wall is being installed, you will require the space in order to get it exactly in place. Later, you can easily backfill the soil once the wall is ready. After removing the soil, level the ground for the wall and compact the soil properly. This will give the wall a uniform base during construction.

Step #5: Take the chain saw to cut the railroad ties to the appropriate lengths you measured. To keep the reinforcing bar from getting disturbed from its place, offset the ends of the ties. Place the 1st rank (level of ties) directly over the ground which you leveled before. With the 18-inch reinforcing bar, tie the ends of the ties inside the soil. Now place the 2nd rank and tie the ends of the ties with the 16-inch reinforcing bar with the 1st rank.

Step #6: As you go higher up the ranks, you need to add the deadman anchors at every 8 feet. Before you install the reinforcing bar inside the soil, hammer the length or the bar perpendicular through the extreme end of each anchor. Fix the closer end of the rank below and spike it inside the railroad tie below with the 16-inch reinforcing bar piece. Counterbalance each rank so that the anchors or the ties don't overlap one another.

Step #7: Once you've finished placing all the railroad ties in place according to your landscaping aesthetics, it's time to backfill the soil. But before that, you'll have to staple a layer of landscape fabric behind the wall. This will keep the soil from entering the gaps in the ties.

Step #8: For providing good drainage and improving your retaining wall's lifespan, place a layer of gravel behind the wall as well. After which, fill the rest of the area with the soil you had shoveled away earlier. Try not to use expansive clay here, instead of soil, as it will only push the wall from its place.

As constructing the wall is a tedious process and can seriously tire you, ask someone in your family or a friend to help you out. You'll get done sooner and get some helpful insights from them as well. If you intend to get some professional help and want to find out the cost, you can get in touch with the contractors in your area. Get an estimate from them and compare it with the amount of time and money you'll be putting in if you plan to do it yourself.

Текст 19

1. Прочитайте и переведите текст на русский язык.
2. Составьте план текста.
3. Перескажите текст на английском языке.

Brick Wall Construction

Contrary to what many people believe, the construction of a brick wall is not really a difficult task - especially if you have a step by step guide at your disposal.

Building a brick wall is not as difficult as it seems; you just need to get the basic right. Choosing good quality material for the brick wall and putting your efforts are the two factors which play a crucial role in the brick wall construction. More importantly, building it on your own will also help you save a decent sum of money. The investment involved in it will include the money spent in buying the necessary material, and some of your valuable time, ideally a weekend.

Brick Wall Requirements

The overall cost incurred will depend on the quality of the building material you use, and where you get it from. We recommend buying good quality bricks and cement, even if it costs a bit extra, as that will directly reflect on the longevity of your wall. Other than bricks, cement and water you will also require some masonry tools to build a brick wall. These tools will include trowel, i.e. a small hand tool with a flat metal blade, shovel, measuring tape, a level indicator for horizontal surfaces, etc. Once you are ready with all the tools, you can start building the brick wall.

Brick Wall Construction Guide

The durability of the brick wall depends on the foundation structure or the footing of the wall, and hence the foundation structure should be strong enough to the carry of the entire load. The ratio of the wall and foundation should ideally be 3:1, which means for every 3 feet wall above the ground, you should have a foot deep foundation. If you want to construct a 6 feet tall wall, its foundation should be two feet. Ideally, the foundation should be in an inverted T shape, with the extra footing on either side of the wall. If you intend to build a brick wall of the width of two bricks, your foundation should have the width of 4 bricks.

You can start by digging the ground and laying the foundation using the mortar mix and bricks. Mortar mix is prepared by mixing cement, sand with water. Follow the manufacturers instructions to decide on the proportion of these material required to make the mortar mix. Too dry or too wet mortar will not be

suitable for the construction. Make sure that there are no gaps in the foundation. Fill all the gaps using the trowel to feed the mortar in them.

Once the foundation is laid, allow it to dry for some time. After it dries, you can start the construction of the remaining wall. Pour some water on the bricks to make them wet, so that they don't absorb water from the mortar and make it dry powdery and ineffective. Start the construction from one side of the foundation. Using the trowel prepare a layer of mortar on the foundation, and keep a brick on either end of the foundation. Use a cord and fasten it around the bricks placed at both ends. This cord will ensure that the alignment of bricks is in a straight line. Once the cord is in place put some mortar along the base, and set the brick on it. After the first brick is set, put some mortar on the side and set the second brick. Continue in similar sequence until the entire layer is over.

You will have to be careful as to not leave any space in between these bricks. Using the trowel you will have to fill all the gaps that are visible. Use the level indicator to ensure that the alignment is correct. Start with the second layer of the bricks in similar fashion as you did the first one. Continue with subsequent layers until you get the desired height. Allow it to dry for some time and your brick wall is complete.

In order to make the wall clean and presentable, you will have to brush off the excess mortar on it. If you intend to build a wall with stone, the basic process will be the same, however, you might have to abide by some specific instructions required for that particular stone type.

Текст 20

1. Прочитайте текст.
2. Найдите в тексте интернациональную лексику. Определите её значение и переведите на русский язык.
3. Перескажите текст на русском языке.

How To Lay Bricks

Have you ever thought of building your own house or just a fence around it? But how to lay bricks must be your first question in mind. Here are few tips and directions to lay bricks and build a small structure of your own.

Are you thinking of having a fence around your house? Or a mail box enclosure? But spending a big amount on such a small thing doesn't seem to be a good idea for you. Then don't worry at all, you can do it by yourself. Yes you can! We are here to help you out with this. So, let's start with the basic idea of bricklaying techniques and few tips to build a small piece for yourself.

Material and Tools Required

The building materials and tools required to start with bricklaying should be gathered first. You will require mortar, masonry sand, brick, wheelbarrow, plywood for mortar boards, water source, shovel, foxtail brush, level, mortar hoe for mixing, trowel and pointing tool or jointer. Bring the material according to the necessity. Try not to bring excess of cement as it can catch moisture and will be of no use once it becomes hard.

How to Lay Bricks?

Gather all the materials and tools required in the process at one place where you have to start up with the bricklaying as, once you start, you can't quit the place even for few minutes, it may lead to the wastage of material. Following are the steps which you need to follow while laying bricks.

The place where you are going to start should have a proper base. If it does not have a proper base then you need to fix it first.

Pour a concrete foundation and level it. Try to have a plain slab but not the finished one. Leave it a bit rough so that it can hold the bricks efficiently. Refer to types of concrete for detailed information.

Make a layout of the wall or the mail box you are trying to make. It will guide you when you will be making it and will help you to rectify the mistake at the right time.

Place the mortar board at a regular interval of the required place, so that you can easily use the mortar at the place you are working without wasting time.

Make a mixture of masonry sand and cement in a wheelbarrow. For bigger projects like building houses, you need to have a cement mixer to mix the material.

Put this mixture on the mortarboard but don't forget to wet the board before putting the mixture on it because dry board will soak the moisture of the mixture and will harden it.

Now place a thick layer of approximately 1 inch extending 4 to 6 inch wide with a trowel. Place the brick on the top and tap a bit with the help of your trowel handle. Cut the excess mortar popping out of the side of the bricks due to the pressure. Carry on the process with 6 to 8 bricks and prepare a proper line.

After completing the first course, start the second course. Put the layer or mortar on the first course and then place the brick between the joint of the brick in the first course. This will give strength to the construction. Cut the brick to complete the wall in a proportionate manner if required.

Keep on measuring the level of the course with the help of spirit or carpenter's level.

Carry on with the process till you complete the required structure. You can also refer to the brick layouts for better designs in home construction.

Use a jointer to smooth the mortar on the bricks joint in every layer.

Now rub the bricks with the foxtail brush which will remove the excess mortar from the face of the bricks.

Now leave it to dry. Daily splash water on your constructed piece for few days so as to add more strength to it.

So just pick up your tool, bring your material and start with your own piece of construction. After all, the things we prepare by our own hand are more close to our heart.

Текст 21

1. Прочитайте текст.
2. Найдите в тексте интернациональную лексику. Определите её значение и переведите на русский язык.
3. Выполните реферативный перевод текста.

Zero Lot Line

I say 'zero lot line' and you say what is that? This article will elucidate on the concept of zero lot line. Read on and construct your knowledge on zero lot line.

If you are planning to construct a home of your own, then the concept of zero lot line needs your attention. A zero lot line could be defined as a technique where one boundary wall of the construction is built on the property line. It is adopted in commercial and residential constructions for a number of reasons. Certain regions are debarred from constructing zero-lot-line homes due to certain building codes that the housing development community needs to adhere to, while there are some areas that permit the construction and development on the zero lot line.

Why Use the Zero Lot Line Technique

One of the main reasons to employ the technique is to optimize the usage of the available space. Building the structure on the line helps to build a structure that looks spacious and well-formed.

A construction, right on the zero lot line, is predominantly a master plan to be employed for plots, that are small in area by nature.

A home construction that has setbacks and waivers, is bound to have patches of lawns and small garden areas scattered around the house boundary, on the other hand, homes built on the zero lot line may have a garden area right at the entrance. It is for this reason that these homes are referred to as garden homes, narrow lot homes or simply patio homes. Having a garden to yourself could provide you with an opportunity to install a hammock and some furniture where you could relax and feel at peace with yourself.

Constructing structures based on this technique, allows you to have a spacious interior. The idea of building right on the lot line, aids you to do away with construction of garden areas or any outdoor recreational spaces.

Concentrating on construction of a structure that focuses on indoor space optimization, exempts you from indulging in any landscape designs if you do not prefer any.

The zero lot line does not confine its usage to zero-lot-line house construction communities only, it can be used for structures of any kind, for instance, constructing town halls, stores and supermarkets, to name a few. A supermarket or a basic store does not require ornate landscaping to be performed at the periphery of the structure. Nevertheless, the supermarket can opt for large interiors with ample parking space for vehicles.

The zero lot line, when applied to housing properties proposes the ideal concept of using available space judiciously. Housing societies could be built in such a manner that each dwelling has a small garden or outdoor landscaping at the entryway, providing a sense of privacy to every resident of the housing society. Housing societies, thereby tend to create homes that consist ample room to appreciate and live with the environment.

The housing societies, in an attempt to use space, tend to utilize it by constructing houses that clump together, with the central area serving as the recreational or the garden space.

Zero lot line homes have their own advantages to promote. Nevertheless, considering a household design, it has its own loopholes to propagate.

Building a zero lot line dwelling for yourself may deflect your home from having a lot of windows as the available space between two structures is marginal. The other reason that spells negative for zero lot line homes, is that two structures may share the same boundary line.

Housing developments may pose extreme difficulties for residents as maintenance schedule and cleanliness drives could infringe on someone's personal zone.

It is due to this very reason that zero lot line structures, sometimes, are not entertained as one resident may unintentionally entrench the privacy of the other resident who is also a rightful resident of the society.

The zero lot line concept of construction is predominantly applied to public unit developments where the houses are constructed in condominium. This is where two housing structure have one common wall to share.

As specified early on in the article, the owner has to be prudent about any action he takes on the front of maintenance or any kind of work that involves messy processes such as plumbing, drain unclogging procedures, home decorating avenues that may involve installation of crown molds or wainscoting the walls.

Remember these are programs that involve toil on your part. You must ensure that the technician is an expert in his respective field and is aware of

using the materials in the best possible way without creating any mess, which may cause inconvenience to your neighbor.

So, go ahead with the zero lot line technique and own a dream dwelling that flaunts elegance and a smart space utilization. Now, that's called being an environment friendly species of the Homo sapiens clan! You ought to be one!

Текст 22

1. Прочитайте и переведите текст на русский язык.
2. Составьте план текста.
3. Перескажите текст на английском языке.

Certificate of Occupancy

Certificate of occupancy is a document that is mandatory to be obtained in the United States. Read the article to know more about the certificate, its importance and how to obtain it.

Certificate of occupancy is a document certifying that the building has complied with all the applicable building codes and laws, such as building codes for decks. This certificate is issued by either a building department or a local government agency. The purpose of issuing such a certificate implies that the building is in a livable condition or is ready enough to be occupied. In order to obtain the certificate one needs to follow certain procedures and fulfill certain requirements.

Generally it is required in case of three conditions, first when the new building is being constructed, second based on the change of use of the building. It'll be easy to understand with an example, if the building was used for industrial purposes and is now to be used as a residence then it requires a certificate of occupancy to prove the change of use to be legal and allowed by the respective jurisdiction. The third condition is the change of ownership of any kind of a building, be it a residential, commercial or an industrial building.

Procedure for Obtaining Certificate of Occupancy, NYC

Applying for a Certificate

The first thing to do when you are buying or building a house is to visit the Buildings Department Customer Service Office of your borough office and check if the house has a certificate of occupancy or the status if it's pending. If the certificate is not issued then you need to work according to the requirements given to you in the office. An easy way of doing it is to visit the website: www.nyc.gov/bis, tick on your respective borough and enter the address which needs to be verified. If the building or the house does not have a certificate then

you could check all the building requirements that are necessary in order to obtain the certificate.

Finish the Pending Work

The second step would be to hire the contractors and finish up all the pending work of the house to comply by the building requirements. The construction plan for renovation or building a new house needs to be submitted by the contractors to get an approval from the Department of Buildings. This will be followed by an inspection from the department for which an appointment needs to be taken in advance.

Temporary/Conditional Certificate

If the work is unfinished and if you need to move into the new house and cannot wait until you receive the final certificate then you can request for a temporary certificate of occupancy that is valid for 90 days in New York City. This is also issued after an inspection that concludes that the basic safety requirements are in place for the house to be occupied.

Final Certificate

After the inspection if the authorized person from the department is convinced that the home construction or the home improvement project has complied by all the building codes, the fee is paid and all the paperwork is submitted, the certificate of occupancy will be approved and issued.

Some of the most important points checked by the inspection authorities include exterior and interior paintings of the house, architecture, smoke alarms on all the levels of the building, plumbing leaks such as leaky faucets, whether sewage systems are for sewage or ground water, handrails on the stairways, condition of the window panes, if it's broken or cracked, condition of the stove burners and heating systems in the house, cover plates on switches and electrical junction boxes, condition of the walkways or sidewalks etc. These are only some of the points, in order to obtain a certificate of occupancy there may be several other factors to ensure safety in the house.

Building Costs Per Square Foot

If you are looking for some tips on calculating construction costs per square foot, this article will be an insightful reading.

No other project can be as time-consuming and complex as building a house from ground up. Planning out the whole project from choice of land, to designing and actual construction can be a daunting task. Even before you start with the actual project, the most important task is estimating the building costs. Without a general estimate of total construction costs, you cannot proceed with construction.

Right at the start, one fact must be cleared out. If you are looking for building costs in California or Texas, or any other state, I suggest that you visit a

real estate portal, which has the prices listed. It's not possible to provide you with the exact construction costs, as all the prices are a function of time, location and type of home construction and other such details.

Calculation Formula

Let us talk about the math involved in the whole operation. The formula used for estimating the building costs is simple and straightforward enough to understand. Here it is:

Building Cost Per Square Foot = (Total Building Cost) / (Total Area of the House in Square Feet)

Factors Involved

There are various factors which come into play when estimating costs. First and foremost, there is the cost of leveling land and buying it which you need to take into consideration. Then there are the actual building material costs, labor costs, plumbing and furnishing costs. All these prices will vary according to the location at which you plan to build your house. To get an estimate, you need to sum up the price involved in all these factors. A lot depends on the design you opt for, when building the house. Innovative and out of the box designs demand complex architectural structures which raise the costs. Conventional box type designs will cost lesser in comparison.

How to Estimate Building Cost Per Square Foot

To get some actual building cost estimates, you have to make some phone calls and meet up with people engaged in the business like architects and engineers. Contact some of the local contractors, who can provide you with actual construction costs, along with labor costs and building material costs.

Another good source for building construction related data are your local real estate agents. Ask for prices of houses in the locality, where you plan to build your house and among them, check out the ones whose design matches your house. Divide the actual price of the house by the square footage of the house, to get the per square foot cost.

Get your house design ready and then estimate the costs involved in the various factors like labor, material costs, furnishing and land leveling. Create a stage wise cost breakdown of the whole construction project, to get an idea about the overall cost to build a house.

If you take all the variable affecting building costs into consideration, you will be able to get a more realistic estimate of construction costs. Local contractors and real estate agents are your best source of information when it comes to estimating the costs.

Cost to Build a House Per Square Foot

If you are trying to calculate the cost of building a house, this article will be helpful. Such a project requires a lot of study and analysis of building and

material costs. Read to get an idea about how you can get a rough estimate of house building costs.

Building your own house is a dream of a lifetime, and it's essential that you calculate the building costs, so that you can ensure that your finances are adequate for the job at hand. How much does it cost to build a house per square foot? Sounds like a simple enough question, but quoting an exact numerical answer to it, will need a supercomputer for sure!

It will have to analyze all the prices of all houses ever built in the United States of America, will have to know the building costs, material costs, real estate prices in every area, the variable costs of labor in different regions and future market prices. From all this information, it will have to construct a formula, that can calculate building costs per square foot and then average it out over all these variables, to give you a number! Unfortunately, we do not have a supercomputer or the data and therefore it is not possible to give you an absolute number, as it's an unrealistic question to ask.

However, if you are willing to study and work out all the details that are involved in building your house and gather all the related information, then you can come up with a cost estimate. The method of estimating the total building costs per square foot, is to calculate the total estimated cost for building your house, according to current market prices (without including price of land purchase) and then dividing it by the total built-in floor area in square feet. Home construction is a satisfying, but hugely challenging job, that requires a lot of planning. Still, considering the rough price spread all over the country, you may expect the per square foot cost to be anywhere between $90 to more than $150 per square foot, depending on the quality of furnishing, degree of lavishness, house design and many other factors explained in the following lines.

Factors Affecting Construction Cost

Let us look at the factors that affect the building costs per square foot. The prime factors are as follows:

Total Size & Shape of House: The total size and shape of your house will affect the building costs per square foot. A box shaped house costs less while unconventional designs, with more architectural complexity will cost more. The number of floors and rooms to be built, will decide the roofing costs.

Land & Cost of Site Preparation: A major expense before even beginning the building of a house is the leveling costs of a land plot. The site needs to be dug, to build the foundation, which adds to the costs. A land with a slope is difficult to build on and needs a lot of leveling.

Building Material Costs: This is a very important parameter, which matters a lot. The kind of materials you use for building your house, affect the building costs.

Labor Costs: This is the money you need to pay for the labor involved in construction.

Quality of Furnishing: The cost of your house is of course directly proportional to the degree of lavishness you go for, in terms of furnishing and facilities. A swimming pool for example, will cause the building costs per square foot to sky rocket.

Location: An important parameter is the location of your house as it will decide the labor costs and prices of building material, which are subject to the local market fluctuations.

Tips on Calculating Building Cost

After that overview of factors affecting building costs, let me share some tips on how you can calculate the cost to build a house, on your own.

Be Clear About the House Design

Before you can make any estimates, you need to have a built-to-scale design of your house, made by a qualified architect. It needs to embody everything that you expect your house to be. Without a design, no estimation is possible. The design can help you in getting a realistic estimate of all the costs involved in building your house.

Gather Information About Current Market Costs

Next thing to do is consult your architect and make a list of the building materials involved in house construction. Gather information about market costs, related to every one of the above factors.

Take Help From Local Contractors

To get an idea about building costs, consult builders in your area. If possible, inquire about the building costs of houses, which are similar to the design of your house. All this information, which includes building, labor, material and architectural designing costs will enable you to come up with a realistic number of total cost to build your house. Then divide it by the total square footage of your house flooring, which will give you the building cost per square foot.

All that said and done, there are two ways of approaching the problem of estimation. Either you create a model of your dream home in excruciating detail and then estimate the cost, by calculating the price of each factor, or you decide the maximum amount you are willing to spend and find out what kind of house fits that budget. The latter approach is more realistic one. Make sure that your total building budget is 10% to 15% more than the estimated total cost of building. This precaution is to keep a margin for unforeseen expenses and inflation, arising out of changing market conditions. Planning in advance is the key.

Часть II. АРХИТЕКТУРА И ГРАДОСТРОИТЕЛЬСТВО

Текст 1

1. Прочитайте текст.
2. Напишите аннотацию текста на русском языке.
3. Составьте реферат на английском языке.

Château de Chambord

The royal **Château de Chambord** at Chambord, Loir-et-Cher, France, is one of the most recognizable châteaux in the world because of its very distinct French Renaissance architecture which blends traditional French medieval forms with classical Renaissance structures. The building, which was never completed, was constructed by King François I.

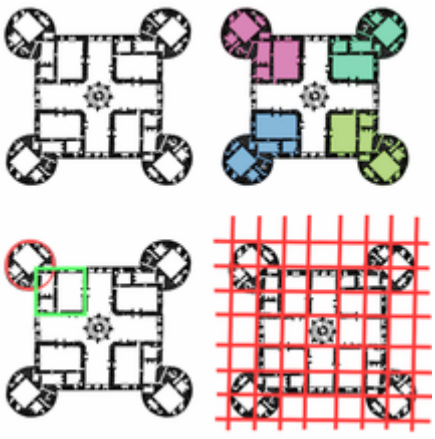
Chambord is the largest château in the Loire Valley; it was built to serve as a hunting lodge for François I, who maintained his royal residences at Château de Blois and Château d'Amboise. The original design of the Château de Chambord is attributed, though with several doubts, to Domenico da Cortona. Some authors claim that the French Renaissance architect Philibert Delorme had a considerable role in the château's design, and others have suggested that Leonardo da Vinci may have designed it.

Chambord was altered considerably during the twenty-eight years of its construction (1519–1547) during which it was overseen on-site by Pierre Nepveu. With the château nearing completion, François showed off his enormous symbol of wealth and power by hosting his old archnemesis, Emperor Charles V at Chambord.

In 1792, some of the furnishings were sold and timber removed. For a time the building was left abandoned, though in the 19th century some attempts were made at restoration. During the Second World War art works from the collections of the Louvre and Compiègne were moved to Château de Chambord. Now open to the public, in 2007 the château received 700,000 visitors.

Architecture

Plan depicting the original concept of the château, before the posterior addition of the wings and the enclosure. The original building centres around its double-helix staircase, by a point reflection. Each floor is organised with four identical stately dwellings. A stately dwelling, designed to host a lord and his family circle and domestics, is built by the crossing of a circle and a square. Finally, the château (future "keep") fills in an orthogonal grid with the central staircase as unit.



Aerial view of Château Chambord

Châteaux in the 16th-century departed from castle architecture; while they were off-shoots of castles, with features commonly associated with them, they did not have serious defences. Extensive gardens and water features, such as a moat, were common amongst châteaux from this period. Chambord is no exception to this pattern. The layout is reminiscent of a typical castle with a keep, corner towers, and defended by a moat. Built in Renaissance style, the internal layout is an early example of the French and Italian style of grouping rooms into self-contained suites, a departure from the medieval style of corridor rooms. The massive château is composed of a central keep with four immense bastiontowers at the corners. The keep also forms part of the front wall of a larger compound with two more large towers. Bases for a possible further two towers are found at the rear, but these were never developed, and remain the same height as the wall. The château features 440 rooms, 282 fireplaces, and 84 staircases. Four rectangular vaulted hallways on each floor form a cross-shape.

The château was never intended to provide any form of defense from enemies; consequently the walls, towers and partial moat are purely decorative, and even at the time were an anachronism. Some elements of the architecture – open windows, loggia, and a vast outdoor area at the top – borrowed from the Italian Renaissance architecture – are less practical in cold and damp northern France.

The roofscape of Chambord contrasts with the masses of its masonry and has often been compared with the skyline of a town:it shows eleven kinds of towers and three types of chimneys, without symmetry, framed at the corners by the massive towers. The design parallels are north Italian and Leonardesque. Writer Henry James remarked "the towers, cupolas, the gables, the lanterns, the chimneys, look more like the spires of a city than the salient points of a single building."

One of the architectural highlights is the spectacular double helix open staircase that is the centerpiece of the château. The two helices ascend the three floors without ever meeting, illuminated from above by a sort of light house at the highest point of the château. There are suggestions that Leonardo da Vinci may have designed the staircase, but this has not been confirmed. Writer John Evelyn said of the staircase "it is devised with four (sic) entries or ascents, which cross one another, so that though four persons meet, they never come in sight, but by small loopholes, till they land. It consists of 274 steps (as I

remember), and is an extraordinary work, but of far greater expense than use or beauty."

The elaborately developed roof line. It should be noted that the keep's façade is deliberately asymmetrical, with the exception of the Northwest façade, latterly revised, when the two wings were added to the château.

The château also features 128 meters of façade, more than 800 sculpted columns and an elaborately decorated roof. When François I commissioned the construction of Chambord, he wanted it to look like the skyline of Constantinople.

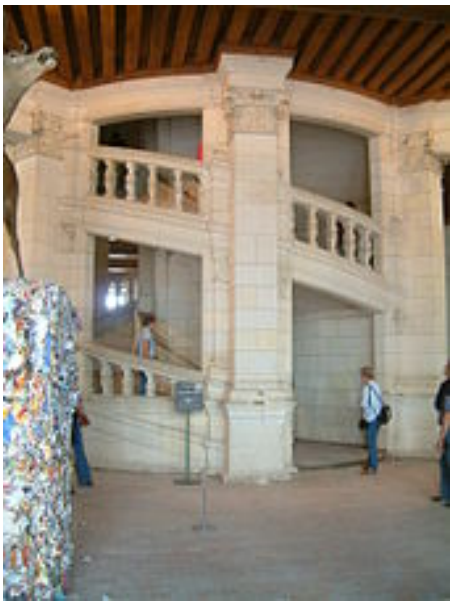
The château is surrounded by a 52.5-km² (13,000-acre) wooded park and game reserve maintained with red deer, enclosed by a 31-kilometer (20-mile) wall. The king's plan to divert the Loire to surround the château came about only in a novel; *Amadis of Gaul*, which François had translated. In the novel the château is referred to as the *Palace of Firm Isle*.

Chambord's towers are atypical of French contemporary design in that they lack turrets and spires. In the opinion of author Tanaka, who suggests Leonardo da Vinci influenced the château's design, they are closer in design to minarets of 15th-century Milan.

The design and architecture of the château inspired William Henry Crossland for his design of what is known as the Founder's building at Royal Holloway, University of London. The Founder's building features very similar towers and layout but was built using red bricks.

Northwest façade of the Château de Chambord

History
Royal ownership



The double-helix staircase

Who designed Château Chambord is a matter of controversy. The original design of the Château de Chambord is attributed, though with several doubts, to Domenico da Cortona, whose wooden model for the design survived long enough to be drawn by André Félibien in the 17th century. Some authors, though, claim that the French Renaissance architect Philibert Delorme had a considerable role in the Château's design. In 1913 Marcel Reymond suggested that Leonardo da Vinci, a guest of François at Clos Lucé near Amboise, was responsible for the original design, which reflects Leonardo's plans for a château at Romorantin for the King's mother, and his interests in central planning and double helical staircases; the discussion has not yet concluded.

Regardless of who designed the château, on 6 September 1519 François Pombriant was ordered to begin construction of Château Chambord. The work was interrupted by the Italian War of 1521–1526, and work was slowed by dwindling royal funds and difficulties in laying the structure's foundations. By 1524, the walls were barely above ground level. Building resumed in September 1526, at which point 1,800 workers were employed building the château. At the time of the death of King François I in 1547, the work had cost 444,070 livres.

The château was built to act as a hunting lodge for King François I, however the king spent barely seven weeks there in total, comprising short hunting visits. As the château had been constructed with the purpose of short stays, it was actually not practical to live there on a longer-term basis. The massive rooms, open windows and high ceilings meant heating was impractical. Similarly, as the château was not surrounded by a village or estate, there was no immediate source of food other than game. This meant that all food had to be brought with the group, typically numbering up to 2,000 people at a time.

Louis XIV's ceremonial bedroom

As a result of all the above, the château was completely unfurnished during this period. All furniture, wall coverings, eating implements and so forth were brought specifically for each hunting trip, a major logistical exercise. It is for this reason that much furniture from the era was built to be disassembled to facilitate transportation. After François died of a heart attack in 1547, the château was not used for almost a century.

For more than 80 years after the death of King François I, French kings abandoned the château, allowing it to fall into decay. Finally, in 1639 King Louis XIII gave it to his brother, Gaston d'Orléans, who saved the château from ruin by carrying out much restoration work. King Louis XIV had the great keep restored and furnished the royal apartments. The king then added a 1,200-horse stable, enabling him to use the château as a hunting lodge and a place to entertain a few weeks each year. Nonetheless, Louis XIV abandoned the château in 1685.

From 1725 to 1733, Stanislas Leszczyński (Stanislas I), the deposed King of Poland and father-in-law of King Louis XV, lived at Chambord. In 1745, as a reward for valour, the king gave the château to Maurice de Saxe, Marshal of France who installed his military regiment there. Maurice de Saxe died in 1750 and once again the colossal château sat empty for many years.

French Revolution and modern history

On the second floor

In 1792, the Revolutionary government ordered the sale of the furnishings; the wall panellings were removed and even floors were taken up and sold for the value of their timber, and, according to M de la Saussaye, the panelled doors were burned to keep the rooms warm during the sales; the empty château was left abandoned until Napoleon Bonaparte gave it to his subordinate, Louis Alexandre Berthier. The château was subsequently purchased from his widow for the infant Duke of Bordeaux, Henri Charles Dieudonné (1820–1883) who took the title Comte de Chambord. A brief attempt at restoration and occupation was made by his grandfather King Charles X (1824–1830) but in 1830 both were exiled. In *Outre-Mer: A Pilgrimage Beyond the Sea*, published in the 1830s, Henry Wadsworth Longfellow remarked on the dilapidation that had set in: "all is mournful and deserted. The grass has overgrown the pavement of the courtyard, and the rude sculpture upon the walls is broken and defaced". During the Franco-Prussian War (1870–1871) the château was used as a field hospital.

The final attempt to make use of the colossus came from the Comte de Chambord but after the Comte died in 1883, the château was left to his sister's heirs, the titular Dukes of Parma, then resident in Austria. First left to Robert, Duke of Parma, who died in 1907 and after him, Elias, Prince of Parma. Any attempts at restoration ended with the onset of World War I in 1914. Château Chambord was confiscated as enemy property in 1915, but the family of the Duke of Parma sued to recover it, and that suit was not settled until 1932; restoration work was not begun until a few years after World War II ended in 1945. The Château and surrounding areas, some 5,440 hectares (13,400 acres; 21.0 sq mi), have belonged to the French state since 1930.

Today, Château de Chambord is a popular tourist attraction.

In 1939, shortly before the outbreak of World War II, the art collections of the Louvre and Compiègne museums (including the Mona Lisa and Venus de Milo) were stored at the Château de Chambord. An American B-24 Liberator bomber crashed onto the château lawn on 22 June 1944. The image of the château has been widely used to sell commodities from chocolate to alcohol and from porcelain to alarm clocks; combined with the various written accounts of visitors, this made Chambord one of the best known examples of France's architectural history. Château Chambord was the inspiration for the Beast's castle in the 1991 animated Disney film Beauty and the Beast. Today, Chambord is a major tourist attraction and in 2007 around 700,000 people visited the château.

Influence

The Founder's Building at Royal Holloway, University of London, designed by William Henry Crossland, was inspired by the Château de Chambord. The main building of Fettes College in Edinburgh, designed by David Bryce in 1870, also contains decorative quotations from the Château de Chambord.

Church of the Gesù

The **Church of the Gesù** (Italian: *Chiesa del Gesù*; Italian pronunciation: [ˈkjɛːza del dʒeˈzu]) is the mother church of the Society of Jesus, a Roman Catholic religious order also known as the Jesuits. Officially named *Chiesa del Santissimo Nome di Gesù all'Argentina* (English: Church of the Most Holy Name of Jesus at the "Argentina"), its facade is "the first truly baroque façade", introducing the baroque style into architecture. The church served as model for innumerable Jesuit churches all over the world, especially in the Americas. The Church of the Gesù is located in the Piazza del Gesù in Rome.

First conceived in 1551 by Saint Ignatius of Loyola, the founder of the Jesuits Society of Jesus, and active during the Protestant Reformation and the subsequent Catholic Reformation, the Gesù was also the home of the Superior General of the Society of Jesus until the suppression of the order in 1773.

History

Although Michelangelo, at the request of the Spanish cardinal Bartolomeo de la Cueva, offered, out of devotion, to design the church free, the endeavor was funded by Cardinal Alessandro Farnese, grandson of Pope Paul III, the pope who had authorized the founding of the Society of Jesus. Ultimately, the main architects involved in the construction were Giacomo Barozzi da Vignola, architect of the Farnese family, and Giacomo della Porta. The church was built on the same spot as the previous church *Santa Maria della Strada*, where Saint Ignatius of Loyola had once prayed before an image of the Holy Virgin. This image, now adorned with gems, can be seen in the church in the chapel of Ignatius on the right side of the altar.

Construction of the church began on 26 June 1568 to Vignola's design. Vignola was assisted by the Jesuit Giovanni Tristano, who took over from Vignola in 1571. When he died in 1575 he was succeeded by the Jesuit architect Giovanni de Rosis. Giacoma della Porta was involved in the construction of the cross-vault, dome, and the apse.

The revision of Vignola's façade design by della Porta has offered architectural historians opportunities for a close comparison between Vignola's balanced composition in three superimposed planes and Della Porta's dynamically fused tension bound by its strong vertical elements, contrasts that have sharpened architectural historians' perceptions for the last century (Whitman 1970:108). Vignola's rejected design remained readily available to architects and prospective patrons in an engraving of 1573.

The design of this church has set a pattern for Jesuit churches that lasted into the twentieth century; its innovations require enumerating. Aesthetics across the Catholic Church as a whole were strongly influenced by the Council of Trent. Although the Council itself said little about church architecture, its suggestion of simplification prompted Charles Borromeo to reform ecclesiastical building practise. Evidence of attention to his writings can be found at the Gesù. There is no nartex in which to linger: the visitor is projected immediately into the body of the church, a single nave without aisles, so that the congregation is assembled and attention is focused on the high altar. In place of aisles there are a series of identical interconnecting chapels behind arched openings, to which entrance is controlled by decorative balustrades with gates. Transepts are reduced to stubs that emphasize the altars of their end walls.

Dome

The plan synthesizes the central planning of the High Renaissance, expressed by the grand scale of the dome and the prominent piers of the crossing, with the extended nave that had been characteristic of the preaching churches, a type of church established by Franciscans and Dominicans since the thirteenth century. Everywhere inlaid polychrome marble revetments are relieved by gilding, frescoed barrel vaults enrich the ceiling and rhetorical white stucco and marble sculptures break out of their tectonic framing. The example of the Gesù did not completely eliminate the traditional basilica church with aisles, but after its example was set, experiments in Baroque church floor plans, oval or Greek cross, were largely confined to smaller churches and chapels.

The church was consecrated by Cardinal Giulio Antonio Santori, the delegate of pope Gregory XIII on 25 November 1584.

Façade

The façade of the church is divided into two sections. The lower section is divided by six pairs of pilasters with Corinthian capitals, while the upper section is divided with four pairs of pilasters. The upper section is joined to the lower section by a volute on each side. The main door stands under a curvilinear tympanum, while the two side doors are under a triangular tympanum. Above the main door one can see a shield with the christogram IHS, representing the name of Jesus *Ihesus*. The façade also shows the papal coat of arms and a shield with the initialism SPQR, tying this church closely to the people of Rome.

Interior decoration

Interior

The first high altar is believed to have been designed by Giacomo della Porta. It was removed during the renovations in the 19th century and its tabernacle was subsequently purchased by archbishop

Patrick Leahy for his new cathedral where it was installed after some minor modifications.

The present high altar, designed by Antonio Sarti (1797–1880), was constructed towards the middle of the 19th century. It is dominated by four columns under a neo-classical pediment. Sarti also covered the apse with marble and made the drawings of the tabernacle. The angels surrounding the IHS aureole were sculpted by Rinaldo Rinaldi (1793–1873). The two angels kneeling at each side of the aureole are the work of Francesco Benaglia and Filippo Gnaccarini (1804–1875). The altarpiece, representing the "Circumcision", was painted by Alessandro Capalti (1810–1868). The ceiling of the apse is adorned by the painting "Glory of the Mystical Lamb" by Baciccia (Giovanni Battista Gaulli).

The most striking feature of the interior decoration is the ceiling fresco, the grandiose *Triumph of the Name of Jesus* by Giovanni Battista Gaulli. Gaulli also frescoed the cupola, including lantern and pendentives, central vault, window recesses, and transepts' ceilings.

The first chapel to the right of the nave is the **Cappella di Sant'Andrea**, so named because the church previously on the site, which had to be demolished to make way for the Jesuit church, was dedicated to St. Andrew. All the painted works were completed by the Florentine Agostino Ciampelli. The frescoes on the arches depict the male martyrs saints Pancrazio, Celso, Vito, and Agapito, while the pilasters depict the female martyred saints Cristina, Margherita, Anastasia, Cecilia, Lucy, and Agatha. The ceiling is frescoed with the *Glory of the Virgin surrounded by martyred saints Clemente, Ignazio di Antiochia, Cipriano, and Policarpo*. The lunettes are frescoed with *Saints Agnes & Lucy face the storm* and *St. Stephen and the Deacon St. Lawrence*. The altarpiece depicts the *Martyrdom of St Andrew*.

IHS monogram above the main altar

The second chapel to the right is the **Cappella della Passione**, with lunette frescoes depicting scenes of the Passion: *Jesus in Gethsemane*, *Kiss of Judas*, and six canvases on the pilasters: *Christ at the column Christ before the guards*, *Christ before Herod*, *Ecce Homo*, *Exit to Calvary*, and *Crucifixion*. The altarpiece of the *Madonna with child and beatified Jesuits*, replaces the original altarpiece by Scipione Pulzone. The program of paintings is indebted to Giuseppe Valeriani and painted by Gaspare Celio. The altar has a bronze urn with the remains of 18th century Jesuit

St. Giuseppe Pignatelli, canonized by Pius XII in 1954. Medals on the wall commemorate P. Jan Roothaan (1785–1853) and P. Pedro Arrupe (1907–1991), the 21st and 28th Superior General of the Society of Jesus.

The third chapel to the right is the **Cappella degli Angeli** has a ceiling fresco of the *Coronation of Virgin* and altarpiece of *Angels worshiping Trinity* by Federico Zuccari. He also painted the canvases on the walls, *Defeat of rebel angels* on right, and *Angels liberate souls from Purgatory* on the left. Other frescoes represent Heaven, Hell, and Purgatory. The angles in the niches of the pilasters were completed by both Silla Longhi and Flaminio Vacca.

Saint Francis Xavier Chapel altar

The larger **Saint Francis Xavier Chapel** in the right transept, was designed by Pietro da Cortona, originally commissioned by cardinal Giovanni Francesco Negroni. The polychromatic marbles enclose a stucco relief representing *Francis Xavier welcomed to heaven by angels*. The altarpiece shows the *Death of Francis Xavier in Shangchuan Island* by Carlo Maratta. The arches are decorated with scenes from the life of the saint, including *Apotheosis of the saint* in the center, *Crucifixion*, *Saint lost at sea*, and at left, *Baptism of an Indian princess*, by Giovanni Andrea Carlone. The silver reliquary conserves part of the saint's right arm (by which he baptized 300,000 people), his other remains are interred in the Jesuit church in Goa.

The last chapel on the far end of the nave, to the right of the high altar, is the chapel of the **Sacro Cuore** (holy heart of Jesus).

The sacristy is on the right. In the presbytery is a bust of Cardinal Robert Bellarmine by Bernini. The sculptor prayed daily in the church.

The first chapel to the left, originally dedicated to the apostles, is now the **Cappella di San Francesco Borgia**, the former Spanish Duke of Gandia, who renounced his title to enter the Jesuit order, and become its third "Preposito generale". The altarpiece, *Saint Francesco Borgia in Prayer* by Pozzo, is surrounded by works by Gagliardi. Ceiling frescoes of (Pentecost) and lunettes (left *Martyrdom of St. Peter*, to sides *Faith and Hope* and right, *Martyrdom of St. Paul*) with allegorical Religion and Charity are works of Nicolò Circignani (Il Pomarancio). Pier Francesco Mola painted the walls, on left with *St. Peter in jail baptizes saints Processo & Martiniano*, to right is the *Conversion of St. Paul*. There are four monuments by Marchesi Ferrari.

St. Ignatius Chapel altar (detail)

The second chapel on the left is dedicated to the Nativity, and called **Cappella della Sacra Famiglia**, commissioned by patron Cardinal Cerri, who worked for the Barberini family. The altarpiece of the nativity by Circignani. In the roof, the *Celestial celebration on the nativity of Christ*, on the pinnacles are David, Isaiah, Zechariah and Baruch, on the right lunette, an *Annunciation to the Shepherds*, and on the left, a *Massacre of the Innocents*. Also are frescoes on *Presentation of Jesus to the Temple* and *Adoration by Magi*. Four allegorical statues represent Temperance, Prudence on right; and Fortitude and Justice.

The third chapel to the left is the **Cappella della Santissima Trinità**, commissioned initially by the clerical patron Pirro Taro, is named due to the main altarpiece by Francesco Bassano the Younger. The frescoes completed mainly by three painters and assistants during 1588-1589; the exact attributions are uncertain, but it is said the Creation, the angels on the pilasters, and the designs of some of the frescoes by the Florentine Jesuit painter, Giovanni Battista Fiammeri. Painted with assistants was the Baptism of Christ on the right wall. The *Transfiguration* on the left wall and the *Abraham with three angels* on the right oval were by Durante Alberti. *God the Father behind a chorus of angels* in the left oval and in the pinnacles, angels with God's attributes, were completed by Ventura Salimbeni. The reliquary on the altar holds the right arm of the polish Jesuit St. Andrew Bobola, martyred in 1657 and canonized by Pius XI in 1938.

St. Ignatius Chapel

The imposing and luxurious **St. Ignatius Chapel**, located on the left side of the transept, is the church's masterpiece, designed by Andrea Pozzo between 1696 and 1700. It houses the saint's tomb. The altar by Pozzo shows the *Trinity* on top of a globe. The lapis lazuli, representing the Earth, is thought

to be the largest piece in the world, but is actually mortar craftily decorated with lapis lazuli. The four lapis lazuli-veneered columns enclose the colossal statue of the saint by Pierre Legros. The latter is a copy, probably by Adamo Tadolini working in the studio of Antonio Canova. Pope Pius VI had the original silver statue melted down, ostensibly to pay the war reparations to Napoleon, as established by the Treaty of Tolentino, 1797. Originally the project was designed by Giacomo della Porta, then by Cortona; but ultimately Pozzo won a public contest to design the altar. A canvas of the Saint receives the monogram with the name of Jesus from the celestial resurrected Christ attributed to Pozzo. The urn of St. Ignatius is a bronze urn by Algardi that holds the body of the saint, below are two groups of statues where *Religion defeats heresy* by Legros (with a putto - on the left side - tearing pages from heretic books by Luther, Calvin and Zwingli), and *Faith defeats idolatry* by Jean-Baptiste Théodon.

The St. Ignatius Chapel also hosts the restored *macchina barocca* or *conversion machine* of Andrea Pozzo. During daytime the statue of St. Ignatius is hidden behind a large painting, but every day at 17.30 loud religious music is played and the painting slides away in the floor, revealing the statue, with large spotlights switched on to show the piece.

The last chapel on the far end of the nave, to the left of the high altar, is the **Chapel of the Madonna della Strada**. The name derives from a medieval icon, once found in a now-lost Church in the piazza Altieri, venerated by sant' Ignazio. The interior is designed and decorated by Giuseppe Valeriani, who painted scenes from the life of the Virgin. The cupola frescoes were painted by G.P. Pozzi.

The pipe organ was built by the Italian firm, Tamburini. It is a large three manual instrument with 5 divisions (pedal, choir, great, swell and antiphonal). The swell and choir are enclosed. The pipes are split into three separate locations within the church. Two ornamented facades flank the transept walls (Swell and Great on the left and Choir and Pedal on the right) and a small antiphonal division is located above the liturgical west entrance.

Текст 2

1. Прочитайте текст.
2. Напишите аннотацию текста на русском языке.
3. Составьте реферат на английском языке.

Louvre Palace

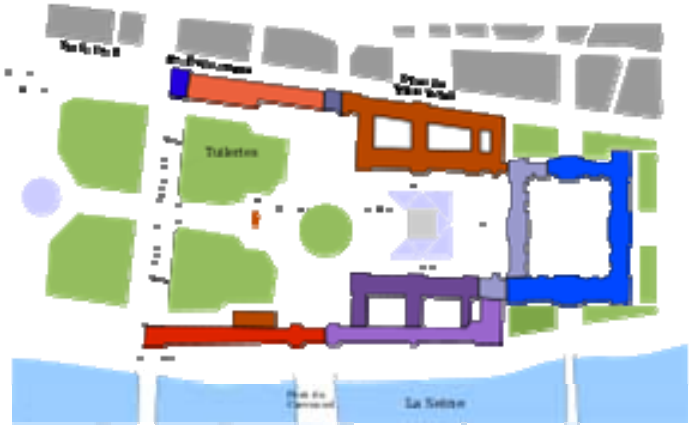
The **Louvre Palace** (French: **Palais du Louvre**, IPA:) is a former royal palace located on the Right Bank of the Seine in Paris, between the Tuileries Gardens and the church of Saint-Germain l'Auxerrois. Its origins date back to the medieval period, and its present structure has evolved in stages since the

16th century. It was the actual seat of power in France until Louis XIV moved to Versailles in 1682, bringing the government with him. The Louvre remained the nominal, or formal, seat of government until the end of the *Ancien Régime* in 1789. Since then it has housed the celebrated Musée du Louvre as well as various government departments.

Description of the present-day palace

The complex

Aerial view of the Louvre Palace



Map of the Louvre Palace complex

The present-day Louvre Palace is a vast complex of wings and pavilions on four main levels which, although it looks to be unified, is the result of many phases of building, modification, destruction and restoration. The Palace is situated in the right-bank of the River Seine between *Rue de Rivoli* to the north and the *Quai François Mitterrand* to the south. To the west is the *Jardin des Tuileries* and, to the east, the *Rue de l'Amiral de Coligny* (its most architecturally famous façade, created by Claude Perrault) and the *Place du Louvre*. The complex occupies about 40 hectares and forms two main quadrilaterals which enclose two large courtyards: the *Cour Carrée* ("Square

Courtyard"), completed under Napoleon I, and the larger *Cour Napoléon* ("Napoleon Courtyard") with the *Cour du Carrousel* to its west, built under Napoleon III. The *Cour Napoléon* and *Cour du Carrousel* are separated by the street known as the *Place du Carrousel*.

The Louvre complex may be divided into the "Old Louvre": the medieval and Renaissance pavilions and wings surrounding the *Cour Carrée*, as well as the *Grande Galerie* extending west along the bank of the Seine; and the "New Louvre": those 19th-century pavilions and wings extending along the north and south sides of the *Cour Napoléon* along with their extensions to the west (north and south of the *Cour du Carrousel*) which were originally part of the long-gone *Palais des Tuileries* (Tuileries Palace).

Some 51,615 sq m (555,000 sq ft) in the palace complex are devoted to public exhibition floor space.

The "Old Louvre"

The Cour Carrée of the "Old Louvre" looking west (Left to right: Aile Lescot, Pavillon Sully (de l'Horloge), Aile Lemercier)

The Old Louvre occupies the site of the 12th-century fortress of King Philip Augustus, also called the Louvre. Its foundations are viewable in the basement level as the "Medieval Louvre" department. This structure was razed in 1546 by King Francis I in favour of a larger royal residence which was added to by almost every subsequent French monarch. King Louis XIV, who resided at the Louvre until his departure for Versailles in 1678, completed the *Cour Carrée*, which was closed off on the city side by a colonnade. The Old Louvre is a quadrilateral approximately 160 m (520 ft) on a side consisting of 8 *ailes* (wings) which are articulated by 8 *pavillons* (pavilions). Starting at the northwest corner and moving clockwise, the *pavillons* consist of the following: *Pavillon de Beauvais*, *Pavillion de Marengo*, Northeast Pavilion, Central Pavilion, Southeast Pavilion, *Pavillon des Arts*, *Pavillon du Roi*, and *Pavillon Sully* (formerly, *Pavillon de l'Horloge*). Between the *Pavillon du Roi* and the

Pavillon Sully is the *Aile Lescot* ("Lescot Wing"): built between 1546 and 1551, it is the oldest part of the visible external elevations and was important in setting the mould for later French architectural classicism. Between the *Pavillon Sully* and the *Pavillon de Beauvais* is the *Aile Lemercier* ("Lemercier Wing"): built in 1639 by Louis XIII and Cardinal Richelieu, it is a symmetrical extension of Lescot's wing in the same Renaissance style. With it, the last external vestiges of the medieval Louvre were demolished.

The "New Louvre"

The Louvre Palace looking west across the Cour Napoleon and the Louvre Pyramid

The New Louvre is the name often given to the wings and pavilions extending the Palace for about 500 m (1,600 ft) westwards on the north (Napoleon I and Napoleon III following the quarter-mile-long Henry IV Seine Riverside *Grande Gallerie*) and on the south (Napoléon III) sides of the *Cour Napoléon* and *Cour du Carrousel*. It was Napoléon III who finally connected the Tuileries Palace with the Louvre in the 1850s, thus finally achieving the *Grand Dessein* ("Great Design") originally envisaged by King Henry IV of France in the 16th century. This consummation only lasted a few years, however, as the Tuileries was burned in 1871 and finally razed in 1883.

The northern limb of the new Louvre consists (from east to west) of three great pavilions along the *Rue de Rivoli*: the *Pavillon de la Bibliothèque*, *Pavillon de Rohan* and *Pavillon de Marsan*. On the inside (court side) of the *Pavillon de la Bibliothèque* are three pavilions; *Pavillon Colbert*, *Pavillon Richelieu* and *Pavillon Turgot*; these pavilions and their wings define three subsidiary Courts, from east to west: *Cour Khorsabad*, *Cour Puget* and *Cour Marly*.

Inside the Pyramid: the view of the Louvre Museum in Paris from the underground lobby of the Pyramid.

The southern limb of the New Louvre consists (from east to west) of five great pavilions along the *Quai François Mitterrand* (and Seine bank): the *Pavillon de la Lesdiguieres*, *Pavillon des Sessions*, *Pavillon de la Tremoille*, *Pavillon des États* and *Pavillon de Flore*. As on the north side, three inside (court side) pavilions (*Pavillon Daru*, *Pavillon Denon* and *Pavillon Mollien*) and their wings define three more subsidiary Courts: *Cour du Sphinx*, *Cour Viconti* and *Cour Lefuel*.

For simplicity, on museum tourist maps, the New Louvre north limb, the New Louvre south limb, and the Old Louvre are designated as the "Richelieu Wing", the "Denon Wing" and the "Sully Wing", respectively. This allows the casual visitor to avoid (to some extent) becoming totally mystified at the bewildering array of named wings and pavilions.

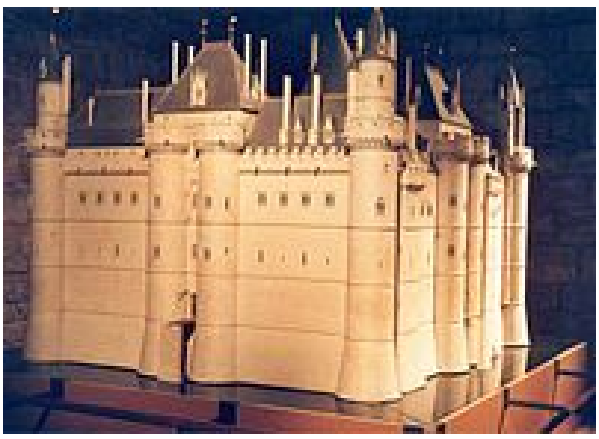
The *Pavillon de Flore* and the *Pavillon de Marsan*, at the western most extremity of the Palace (south and north limbs, respectively), were destroyed when the Third Republic razed the ruined Tuileries, but were subsequently restored beginning in 1874. The *Flore* then served as the model for the renovation of the *Marsan* by architect Gaston Redon.

A vast underground complex of offices, shops, exhibition spaces, storage areas, and parking areas, as well as an auditorium, a tourist bus depot, and a cafeteria, was constructed underneath the Louvre's central courtyards of the *Cour Napoléon* and the *Cour du Carrousel* for François Mitterrand's "Grand Louvre" Project (1981–2002). The ground-level entrance to this complex was situated in the centre of the *Cour Napoléon* and is crowned by the prominent steel-and-glass pyramid (1989) designed by the Chinese American architect I.M. Pei.

History

Origin of its name

The origin of the name **Louvre** is unclear. According to the French historian Henri Sauval, the Louvre received its name from a Frankish word *leovar* or *leower*, signifying a fortified place. But this is now known to be wrong; no such word exists, and Wolf derives Louvre instead from Latin *Rubras* meaning 'red soil'



Medieval period

Fortress

Model of the first royal "Castle of the Louvre"

The *Palais du Louvre* was originally constructed as a fortress, built in the 12th century by king Philip II Augustus along with the City's first enclosure wall to defend the banks of the Seine river against invaders from the north. The fortress had at its centre

a cylindrical tower: the Donjon, or the Keep. (Archaeological discoveries of the original fortress are now part of the Medieval Louvre exhibit in the Sully wing of the museum.)

Philip Augustus' fortress of 1190 was not a royal residence but a sizable arsenal comprising a moated quadrilateral (seventy-eight by seventy-two metres) with round bastions at each corner, and at the centre of the north and west walls. Defensive towers flanked narrow gates in the south and east walls. At the centre of this complex stood a keep, the *Grosse Tour* (fifteen metres in diameter and thirty metres high). Two inner buildings abutted the outer walls on the west and south sides.

Royal residence

The Louvre was renovated frequently through the Middle Ages. Under Louis IX in the mid-13th century, the Louvre became the home of the royal treasury. The castle soon gained a dual function: in addition to its protective role, it became one of the residences of the king and the court, along with the Château de Vincennes, the Hotel Saint-Pol in Le Marais and the Conciergerie of the Île de la Cité.

The fortress was enlarged and beautified in the 14th century by Charles V, making it the most celebrated royal residence in Europe of its time. Charles V began the enlargement of the Louvre in 1358, but his work was ruined in the course of the Hundred Years War and demolished in the 16th century by King Francis I, to make room for a new structure built in the Renaissance style.

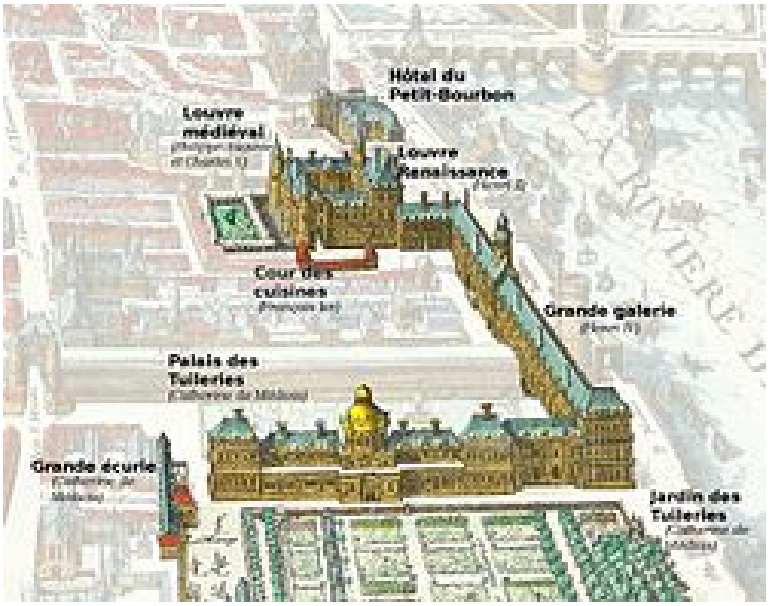
Renaissance period

Beginning in 1546, after returning from his captivity in Spain, Francis I employed architect Pierre Lescot and sculptor Jean Goujon to remove the keep and modernize into a Renaissance style palace. Lescot had previously worked on the châteaux of the Loire Valley and was adopted as the project architect. The new plan consisted of a square courtyard, with the main wing separated by a central staircase, and the two wings of the sides comprising a floor. Lescot added a ceiling to King Henry II's bedroom (*Pavillon du Roi*) that departed from the traditional beamed style, and installed the *Salle des Caryatides*, which featured sculpted caryatids based on Greek and Roman works. Art historian Anthony Blunt refers to Lescot's work "as a form of French classicism, having its own principles and its own harmony". Francis acquired what would become the nucleus of the Louvre's holdings; his acquisitions included Leonardo da Vinci's *Mona Lisa*.

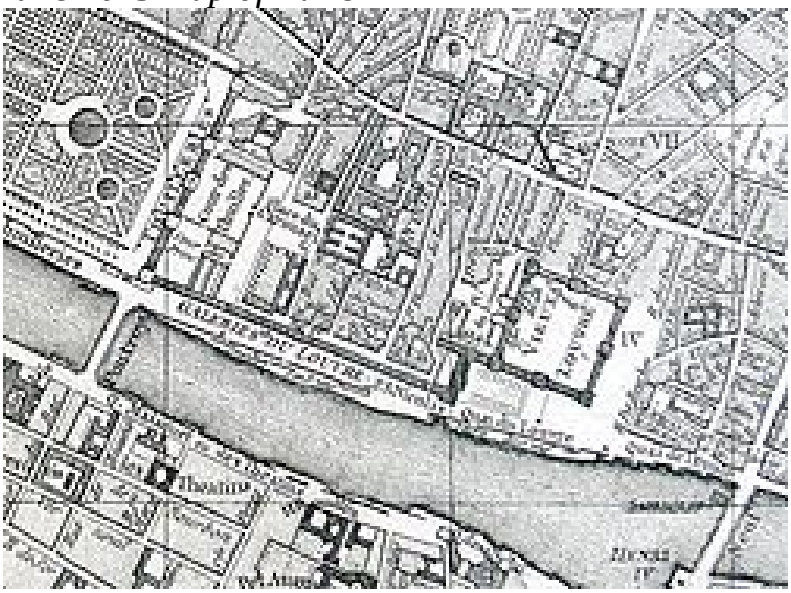
The death of Francis I in 1547, however, interrupted the project. The architect Androuet du Cerceau also worked on the Louvre.

In 1564 Catherine de' Medici directed the building of a château to the west called the Palais des Tuileries, facing the Louvre and the surrounding gardens. The Palace closed off the western end of the Louvre courtyard. Catherine then took over the restoration of the entire palace. Her architect Philibert de l'Orme began the project, and was replaced after his death in 1570 by Jean Bullant.

House of Bourbon



The Louvre, the Tuileries, the Grand Gallery and other buildings highlighted on this 1615 map of Paris



Palais du Louvre as seen on a map of Paris in 1769

The Bourbons took control of France in 1589. During his reign (1589–1610), Henry IV began his "Grand Design" to remove remnants of the medieval fortress, to increase the *Cour Carrée*'s area, and to create a link between the Palais des Tuileries and the Louvre. The link was completed via the *Grande Galerie* by architects Jacques Androuet de Cerceau and Louis Métezeau.

More than a quarter of a mile long and one hundred feet wide, this huge addition was built along the bank of the Seine; at the time of its completion it was the longest building of its kind in the world. Henry IV, a promoter of the arts, invited hundreds of artists and craftsmen to live and work on the building's lower floors. (This tradition continued for another 200 years until Napoleon III ended it.)

In the early 17th century, Louis XIII razed the north wing of the medieval Louvre and replaced it with a continuation of the Lescot Wing. His architect, Jacques Lemercier, designed and completed the wing by 1639 (subsequently known as the *Pavillon de l'Horloge*, after a clock was added in 1857.)

The Richelieu Wing was also built by Louis XIII, the building first being opened to the public as a museum on 8 November 1793 during the French Revolution. Louis XIII (1610–1643) completed the wing now called the Denon Wing, which had been started by Catherine de Medici in 1560. Today it has been renovated, as a part of the Grand Louvre Renovation Programme.

Perrault's east wing of the Louvre (1665-80), one of the most influential classical facades ever built in Europe

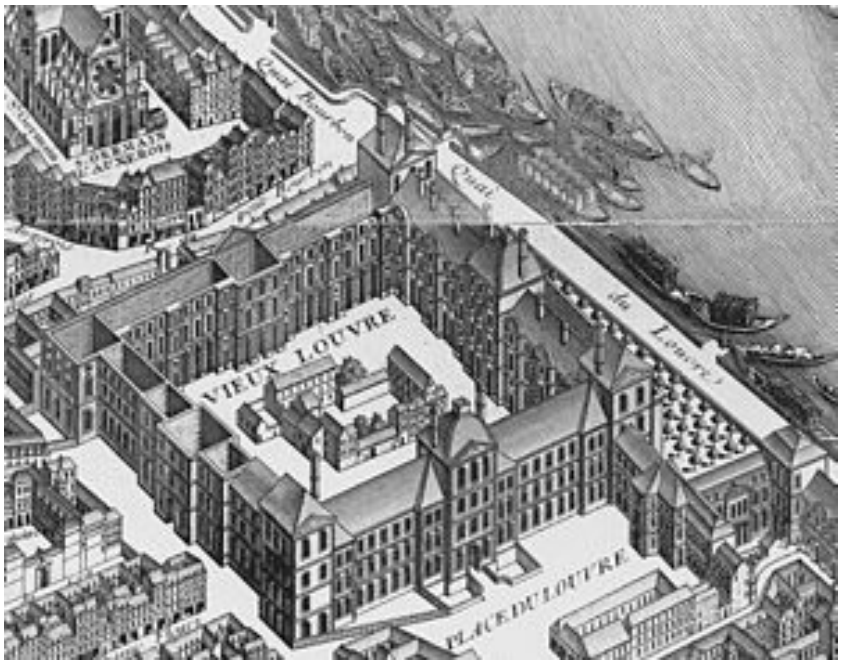
The Louvre under Louis XIV

In 1659, Louis XIV instigated a phase of construction under architects Le Vau and André Le Nôtre, and painter Charles Le Brun. Le Vau oversaw the decoration of the *Pavillon du Roi*, the *Grand Cabinet du Roi*, a new gallery to parallel the *Petite Gallerie*, and a chapel. Le Nôtre redesigned the Tuileries garden in the French style, which had been created in 1564 by Catherine de' Medici in the Italian style; and Le Brun decorated the *Galerie d'Apollon*. A committee of architects proposed on Perrault's Colonnade; the edifice was begun in 1668 but not finished until the 19th century.

Commissioned by Louis XIV, architect Claude Perrault's eastern wing (1665–1680), crowned by an uncompromising Italian balustrade along its distinctly non-French flat roof, was a ground-breaking departure in French architecture. His severe design was chosen over a design provided by the great Italian architect Bernini, who had journeyed to Paris specifically to work on the Louvre. Perrault had translated the Roman architect Vitruvius into French. Now Perrault's rhythmical paired columns form a shadowed colonnade with a central

pedimented triumphal arch entrance raised on a high, rather defensive base, in a restrained classicizing baroque manner that has provided models for grand edifices in Europe and America for centuries. The Metropolitan Museum in New York, for one example, reflects Perrault's Louvre design. In 1678 the royal residence moved to Versailles and the Palais du Louvre became an art gallery.

Jacques Androuet II du Cerceau's Pavillon de Flore (1595), rebuilt by Hector Lefuel



Detail from map segments 11 & 15 with the Louvre, from theTurgot map of Paris. The map was created between 1734 and 1736, then published in 1739.

Later works

In 1806, the construction of the Arc de Triomphe du Carrousel began, situated between the two western wings, commissioned by Emperor Napoleon I to commemorate his military victories, designed by architect Charles Percier,

surmounted by a quadriga sculpted by François Joseph Bosio, and completed in 1808.

The Louvre was still being added to by Napoleon III. The new wing of 1852–1857, by architects Louis Visconti and Hector Lefuel, represents the Second Empire's version of Neo-baroque, full of detail. The extensive sculptural program includes multiple pediments and a series of 86 statues of famous men, each one labelled. These include:

historian Philippe de Commines, by Eugène-Louis Lequesne

naturalist Georges-Louis Leclerc, Comte de Buffon, by Eugène André Oudiné

chemist Antoine Lavoisier, by Jacques-Léonard Maillet

historian Jacques-Auguste de Thou, by Louis Auguste Deligand

philosopher Jean-Jacques Rousseau, by Jean-Baptiste Farochon

Marquis de Vauban, by Gustave Crauck

In 1871 the Tuileries Palace was destroyed in the upheaval during the suppression of the Paris Commune. The western end of the Louvre courtyard has remained open since, forming the Cour d'honneur. Continued expansion and embellishment of the Louvre continued through 1876.

Grand Louvre and the Pyramids

Panoramic view of the Cour Carrée, from the fountain at its centre

The current Louvre Palace is an almost rectangular structure, composed of the square *Cour Carrée* and two wings which wrap the *Cour Napoléon* to the north and south. In the heart of the complex is the Louvre Pyramid, above the visitors' centre. The museum is divided into three wings: the Sully Wing to the east, which contains the *Cour Carrée* and the oldest parts of the Louvre; the Richelieu Wing to the north; and the Denon Wing, which borders the Seine to the south.

In 1983, French President François Mitterrand proposed the *Grand Louvre* plan to renovate the building and move the Finance Ministry out, allowing

displays throughout the building. American architect I. M. Pei was awarded the project and proposed a modernist glass pyramid for the central courtyard. The pyramid and its underground lobby were inaugurated on 15 October 1988. Controversial at first, it has become an accepted Parisian architectural landmark. The second phase of the *Grand Louvre* plan, La Pyramide Inversée (The Inverted Pyramid), was completed in 1993. As of 2002, attendance had doubled since completion.

Текст 3

1. Прочитайте текст.
2. Напишите аннотацию текста на русском языке.
3. Составьте реферат на английском языке.

San Carlo alle Quattro Fontane

The **Church of Saint Charles at the Four Fountains** (Italian: *Chiesa di San Carlo alle Quattro Fontane* also called San Carlino) is a Roman Catholic church in Rome, Italy. The church was designed by the architect Francesco Borromini and it was his first independent commission. It is an iconic masterpiece of Baroque architecture, built as part of a complex of monastic buildings on the Quirinal Hill for the Spanish Trinitarians, an order dedicated to the freeing of Christian slaves. He received the commission in 1634, under the patronage of Cardinal Francesco Barberini, whose palace was across the road. However, this financial backing did not last and subsequently the building project suffered various financial difficulties. It is one of at least three churches in Rome dedicated to San Carlo, including San Carlo ai Catinari and San Carlo al Corso.

History

The monastic buildings and the cloister were completed first after which construction of the church took place during the period 1638-1641 and in 1646 it was dedicated to Saint Charles Borromeo. Although the idea for the serpentine facade must have been conceived fairly early on, probably in the mid-1630s, it was only constructed towards the end of Borromini's life and the upper part was not completed until after the architect's death.

The site for the new church and its monastery was at the south-west corner of the "Quattro Fontane" which refers to the four corner fountains set on the oblique at the intersection of two roads, the Strada Pia and the Strada Felice. Bernini's oval church of Sant' Andrea al Quirinale would later be built further along the Strada Pia.

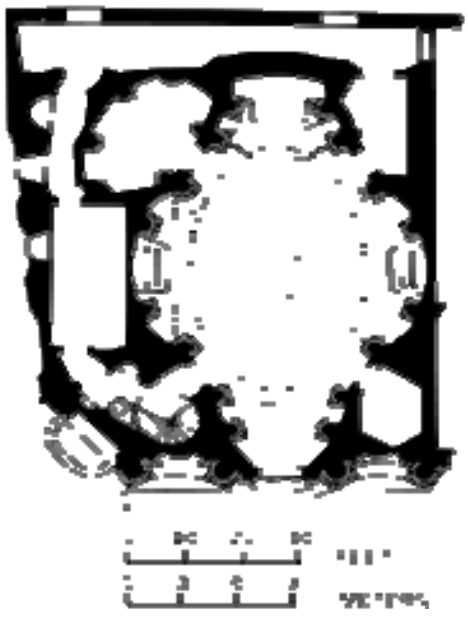
Design

Exterior

Section of San Carlo alle Quattro Fontane, ca. 1730

The concave-convex facade of San Carlo undulates in a non-classic way. Tall corinthian columns stand on plinths and bear the main entablatures; these define the main framework of two storeys and the tripartite bay division. Between the columns, smaller columns with their entablatures weave behind the main columns and in turn they frame niches, windows, a variety of sculptures as well as the main door, the central oval aedicule of the upper order and the oval framed medallion borne aloft by angels. Above the main entrance, cherubim herms frame the central figure of Saint Charles Borromeo by Antonio Raggi and to either side are statues of St. John of Matha and St. Felix of Valois, the founders of the Trinitarian Order.

The plan and section show the layout of the cramped and difficult site; the church is on the corner with the cloister next to it and both face onto the Via Pia. The monastic buildings straddle the site, beyond which Borromini intended to design a garden.



Interior

Floor plan: the Church of San Carlo alle Quattro Fontane.

The church interior is both extraordinary and complex. The three principal parts can be identified vertically as the lower order at ground level, the transition zone of the pendentives and the oval coffered dome with its oval lantern.

In the lower part of the church, the main altar is on the same longitudinal axis as the door and there are two altars on the cross axis. One altar is dedicated to Saint Michael de Sanctis, the other dedicated to Saint John Baptist of the Conception. Between these, and arranged in groups of four, sixteen columns carry a broad and continuous

entablature. The arrangement seems to refer to a cross plan but all the altars are visible as the two central columns in each arrangement of four are placed on the oblique with respect to the axial ordering of the space. This creates an undulating movement effect which is enhanced by the variation in treatment of the bays between the columns with niches, mouldings, and doors. Architectural historians have described how the bay structure of this lower order can have different rhythmic readings and the underlying geometric rationale for this complex ground plan, as well as discussing the symbolism of the church and the distinctive architectural drawings of Borromini.

The dome with its intricate geometrical pattern

The pendentives are part of the transition area where the undulating almost cross-like form of the lower order is reconciled with the oval opening to the dome. The arches which spring from the diagonally placed columns of the lower wall order to frame the altars and entrance, rise to meet the oval entablature and so define the space of the pendentives in which roundels are set.

The oval entablature to the dome has a 'crown' of foliage and frames a view of deep set interlocking coffering of octagons, crosses and hexagons which diminish in size the higher they rise. Light floods in from windows in the lower dome that are hidden by the oval opening and from windows in the side of the lantern. In a hierarchical structuring of light, the illuminated lantern with its symbol of the Holy Trinity is the most brightly lit, the coffering of the dome is thrown into sharp and deep relief and light gradually filters downwards to the darker lower body of the church.

Flanking the apse of the main altar is a pair of identical doorways. The right door leads to the convent through which the crypts below may be accessed. The door on the left leads to an external chapel known as *Capella Barberini* which contains a shrine to blessed Elisabeth Canori Mora.

Crypt

The crypt below follows the size and form of the church and has a low pierced vault. Chapels open off this space, including an octagonal chapel on the

south-east side where Borromini intended to be buried. It has a major and minor niche arrangement and an undulating cornice.

Cloister

Next to the church is the cloister, which is a two-storey arrangement. The space is longer along the entrance axis than it is wide, but the rectangular ordering is interrupted by cutting the corners so it could also be understood as an elongated octagon. Further complexity is introduced by the variation in the spacing of the twelve columns carrying alternating round and flat headed openings, the curvature of the corners, and the inventive balustrade. Geometrical themes are reinforced by the central octagonal wellhead on an oval base and the octagonal capitals of the upper columns.

Behind the church, the refectory, now the sacristy, has rounded corners, a pierced vault, windows in the garden façade and later alterations.

Текст 4

1. Прочитайте текст.
2. Напишите аннотацию текста на русском языке.
3. Составьте реферат на английском языке.

St Paul's Cathedral

St Paul's Cathedral, London, is a Church of England cathedral, the seat of the Bishop of London and mother church of the Diocese of London. It sits at the top of Ludgate Hill, the highest point in the City of London. Its dedication to Paul the Apostle dates back to the original church on this site, founded in AD 604. The present church, dating from the late 17th century, was designed in the English Baroque style by Sir Christopher Wren. Its construction, completed within Wren's lifetime, was part of a major rebuilding programme which took place in the city after the Great Fire of London.

The cathedral is one of the most famous and most recognisable sights of London, with its dome, framed by the spires of Wren's City churches, dominating the skyline for 300 years. At 365 feet (111 m) high, it was the tallest building in London from 1710 to 1962, and its dome is also among the highest in the world. In terms of area, St Paul's is the second largest church building in the United Kingdom after Liverpool Cathedral.

St Paul's Cathedral occupies a significant place in the national identity of the English population. It is the central subject of much promotional material, as well as postcard images of the dome standing tall, surrounded by the smoke and fire of the Blitz. Important services held at St Paul's have included the funerals of Lord Nelson, the Duke of Wellington, Sir Winston Churchill and Margaret Thatcher; Jubilee celebrations for Queen Victoria; peace services marking the end of the First and Second World Wars; the wedding of Charles, Prince of

Wales, and Lady Diana Spencer, the launch of the Festival of Britain and the thanksgiving services for the Golden Jubilee, the 80th Birthday and the Diamond Jubilee of Elizabeth II. St Paul's Cathedral is a busy working church, with hourly prayer and daily services.

History

Pre-Norman cathedrals

There was a late-Roman episcopal see in London, and Bishop Restitutus of London attended the Council of Arles in AD 314. The location of Roman London's cathedral is unknown, although it has been argued that a large and ornate 4th-century building on Tower Hill, remains of which were excavated in 1989, may have been the cathedral.

The Elizabethan antiquarian William Camden argued that a Roman temple dedicated to the goddess Diana had once stood on the site of the medieval St Paul's cathedral. Christopher Wren reported that he had found no trace of any such temple during the works to build the new cathedral after the Great Fire, and Camden's hypothesis is not accepted by modern archaeologists.

Bede records that in AD 604 St Augustine consecrated Mellitus as the first bishop to the Anglo-Saxon kingdom of the East Saxons and their king, Sæberht. Sæberht's uncle and overlord, Æthelberht, king of Kent, built a church dedicated to St Paul in London, as the seat of the new bishop. It is assumed, although unproven, that this first Anglo-Saxon cathedral stood on the same site as the later medieval and the present cathedrals.

On the death of Sæberht in about 616, his pagan sons expelled Mellitus from London, and the East Saxons reverted to paganism. The fate of the first cathedral building is unknown. Christianity was restored among the East Saxons in the late 7th-century and it is presumed that either the Anglo-Saxon cathedral was restored or a new building erected as the seat of bishops such as Cedd, Wine and Earconwald, the last of whom was buried in the cathedral in 693. This building, or a successor, was destroyed by fire in 962, but rebuilt in the same year. King Æthelred the Unready was buried in the cathedral on his death in 1016. The cathedral was burnt, with much of the city, in a fire in 1087, as recorded in the Anglo-Saxon Chronicle.

Old St Paul's

The fourth St Paul's, generally referred to as *Old St Paul's*, was begun by the Normans after the 1087 fire. A further fire in 1136 disrupted the work, and the new cathedral was not consecrated until 1240. During the period of construction, the style of architecture had changed from Romanesque to Gothic and this was reflected in the pointed arches and larger windows of the upper parts and East End of the building. The Gothic ribbed vault was constructed, like that of York Minster, of wood rather than stone, which affected the ultimate fate of the building.

Old St Paul's prior to 1561, with intact spire

An enlargement program commenced in 1256. This 'New Work' was consecrated in 1300 but not complete until 1314. During the later Medieval period St Paul's was exceeded in length only by the Abbey Church of Cluny and in the height of its spire only by Lincoln Cathedral and St. Mary's Church, Stralsund. Excavations by Francis Penrose in 1878 showed that it was 585 feet (178 m) long and 100 feet (30 m) wide (290 feet or 87 m across the transepts and crossing). The spire was about 489 feet (149 m).

By the 16th century the building was starting to decay. Under Henry VIII and Edward VI, the Dissolution of the Monasteries and Chantries Acts led to the destruction of interior ornamentation and the cloisters, charnels, crypts, chapels, shrines, chantries and other buildings in St Paul's Churchyard. Many of these former religious sites in the churchyard, having been seized by the Crown, were sold as shops and rental properties, especially to printers and booksellers, who were often Puritans. In 1561 the spire was destroyed by lightning, an event that was taken by both Protestants and Roman Catholics as a sign of God's displeasure at the other faction.

In the 1630s a west front was added to the building by England's first classical architect, Inigo Jones. There was much defacing and mistreatment of the building by Parliamentarian forces during the Civil War, and the old documents and charters were dispersed and destroyed. During the Commonwealth, those churchyard buildings that were razed supplied ready-dressed building material for construction projects, such as the Lord Protector's city palace, Somerset House. Crowds were drawn to the northeast corner of the churchyard, St Paul's Cross, where open-air preaching took place.

In the Great Fire of London of 1666, *Old St Pauls* was gutted. While it might have been possible to reconstruct it, a decision was taken to build a new cathedral in a modern style. This course of action had been proposed even before the fire.

Present St Paul's

An aerial view of St Paul's

The task of designing a replacement structure was officially assigned to Sir Christopher Wren on 30 July 1669. He had previously been put in charge of the rebuilding of churches to replace those lost in the Great Fire. More than fifty City churches are attributable to Wren. Concurrent with designing St Paul's, Wren was enagaged in the production of his five *Tracts* on Architecture.

Wren had begun advising on the repair of the *Old St Paul's* in 1661, five years before the Great Fire of London in 1666. The proposed work included renovations to both interior and exterior that would complement the Classical facade designed by Inigo Jones in 1630. Wren planned to replace the dilapidated tower with a dome, using the existent structure as a scaffold. He produced a drawing of the proposed dome, showing that it was at this stage at which he conceived the idea that it should span both nave and aisles at the crossing. After the fire, It was at first thought possible to retain a substantial part of the old cathedral, but ultimately the entire structure was demolished in the early 1670s to start afresh.

In July 1668 Dean William Sancroft wrote to Christopher Wren that he was charged by the Archbishop of Canterbury, in agreement with the Bishops of London and Oxford to design a new cathedral that was "handsome and noble to all the ends of it and to the reputation of the City and the nation". The design process took several years, but a design was finally settled and attached to a royal warrant, with the proviso that Wren was permitted to make any further changes that he deemed necessary. The result was the present St Paul's Cathedral, still the second largest church in Britain and with a dome proclaimed

as the finest in the world. The building was financed by a tax on coal, and was completed within its architect's lifetime, and with many of the major contractors employed for the duration.

The "topping out" of the cathedral (when the final stone was placed on the lantern) took place on 26 October 1708, performed by Wren's son Christopher Jr and the son of one of the masons. The cathedral was declared officially complete by Parliament on 25 December 1711 (Christmas Day). In fact, construction was to continue for several years after that, with the statues on the roof only being added in the 1720s. In 1716 the total costs amounted to £1,095,556 (£139 million in 2013).

Consecration

On 2 December 1697, only thirty-two years and three months after the Great Fire destroyed *Old St Paul's*, the new cathedral was consecrated for use. The Right Reverend Henry Compton, Bishop of London, preached the sermon. It was based on the text of Psalm 122, "I was glad when they said unto me: Let us go into the house of the Lord." The first regular service was held on the following Sunday.

Opinions of Wren's cathedral differed, with some loving it: *Without, within, below, above, the eye / Is filled with unrestrained delight*, while others hated it: *...There was an air of Popery about the gilded capitals, the heavy arches...They were unfamiliar, un-English...*

St Paul's, seen across the River Thames, 1850

Since 1900

War damage

The iconic St Paul's Survives taken on 29 December 1940 of St Paul's during The Blitz

The cathedral survived despite being targeted during the Blitz — it was struck by bombs on 10 October 1940 and 17 April 1941. On 12 September 1940 a time-delayed bomb that had struck the cathedral was successfully defused and removed by a bomb disposal detachment of Royal Engineers under the command of Temporary Lieutenant Robert Davies. Had this bomb detonated, it would have totally destroyed the cathedral, as it left a 100-foot (30 m) crater when later remotely detonated in a secure location. As a result of this action, Davies and Sapper George Cameron Wylie were both awarded the George Cross. Davies' George Cross and other medals are on display at the Imperial War Museum, London.

One of the best known images of London during the war was a photograph of St Paul's taken on the 29 December 1940 during the "Second Great Fire of London" by photographer Herbert Mason, from the roof of the Daily Mail in Tudor Street showing the cathedral shrouded in smoke. Lisa Jardine of Queen Mary, University of London, has written:

"Wreathed in billowing smoke, amidst the chaos and destruction of war, the pale dome stands proud and glorious – indomitable. At the height of that air-raid, Sir Winston Churchill telephoned the Guildhall to insist that all fire-fighting resources be directed at St Paul's. The cathedral must be saved, he said, damage to the fabric would sap the morale of the country."

Restoration

Extensive copper, lead and slate renovation work on the Dome in 1996 by John B. Chambers. A 15-year restoration project – one of the largest ever undertaken in the UK – was completed on 15 June 2011.

Occupy London

In October 2011 an anti-capitalism Occupy London encampment was established in front of the cathedral. The cathedral's finances came under scrutiny. It was claimed that the cathedral was losing revenue of £20,000 per day. Canon Chancellor Giles Fraser resigned, warning that to evict the anti-capitalist activists would constitute "violence in the name of the Church". The encampment was evicted at the end of February 2012, after legal action by the City Corporation.

Ministry

St Paul's Cathedral is a busy church with three or four services every day, including Matins, Eucharist and Evening Prayer or Evensong. In addition, the Cathedral has many special services associated with the City of London, its corporation, guilds and institutions. The cathedral, as the largest church in London, also has a role in many state functions such as the service celebrating the Diamond Jubilee of Queen Elizabeth II. The cathedral is generally open daily to tourists, and has a regular program of organ recitals and other performances. The Bishop of London is The Right Reverend Richard Chartres who was installed in January 1996.

St Paul's during a special service in 2008

Dean and chapter

The Chapter comprises the Dean and four Residentiary Canons, each with a different responsibility in the running of the cathedral.

Dean – The Very Revd Dr David Ison (since 25 May 2012)

Pastor – The Rt Revd Michael Colclough (since 20 April 2008) is responsible for the pastoral needs of the staff and all visitors to the cathedral.

Chancellor – The Revd Canon Mark Oakley (since 11 January 2013). Previously Treasurer of St Paul's, Canon Oakley is in charge of the cathedral's educational outreach to schools and the public.

Precentor – The Revd Canon Michael Hampel (since 25 March 2011), is responsible for music at the cathedral.

Treasurer – Revd Preb Philippa Boardman (May 2013) is responsible for finance and for the cathedral building.

College of Minor Canons

There are three Minor Canons who co-ordinate many aspects of the daily running of the cathedral, conducting services, arranging liturgy and music, acting as chaplain, and facilitating the needs of visitors and school groups.

Sacrist – The Revd Jason Rendell (since June 2007), has been appointed as Chaplain to the Bishop of Chichester (June 2013).

Chaplain – The Revd Sarah Eynstone (since 12 January 2010 installation)

Succentor – The Revd Jonathan Coore (since 19 September 2012 installation)

Organ

The organ was commissioned from Bernard Smith in 1694. The current instrument is the third-largest in Great Britain in terms of number of pipes (7,266), with 5 manuals, 189 ranks of pipes and 108 stops, enclosed in an impressive case designed in Wren's workshop and decorated by Grinling Gibbons.

Choir

St Paul's Cathedral has a choir of men and boys to sing regularly at services. The earliest records of the choir date from 1127. The present choir consist of thirty boy choristers, eight probationers, and the Vicars Choral of twelve men who are professional singers. During school terms the choir sings at Evensong six times per week, the service on Thursdays being sung by the Vicars Choral without the boys. On Sundays the choir also sings at Matins and Eucharist.

Many distinguished musicians have been organists, choir masters and choristers at St Pauls Cathedral including the composers John Redford, Thomas Morley, John Blow, Jeremiah Clarke and John Stainer, while well known performers have included Alfred Deller, John Shirley-Quirk, Anthony Way and the conductors Charles Groves and Paul Hillier, and the poet Walter de la Mare.

Wren's cathedral

Development of the design

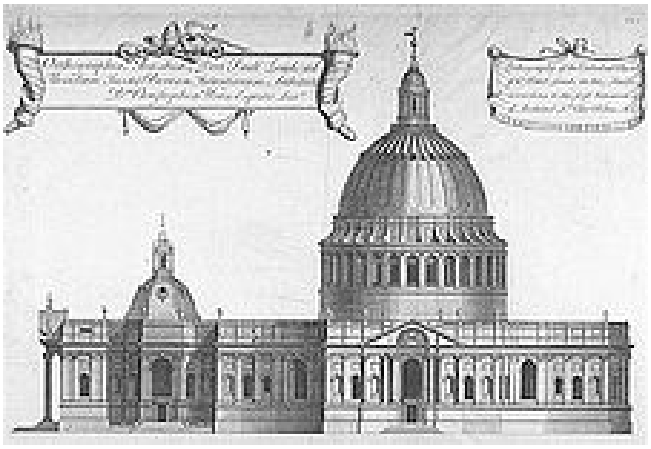
In the designing of St Paul's, Christopher Wren had to meet many challenges. He had to create a fitting cathedral to replace *Old St Paul's*, both as a place of worship and as a landmark within the City of London. He had to satisfy both the requirements of the church and the tastes of a royal patron. As well as respecting the essentially Medieval tradition of English church building that had grown and developed to accommodate the liturgy, Wren was familiar with contemporary Renaissance and Baroque trends in Italian architecture, and had visited France, where he studied the work of François Mansart.

St Paul's went through five general stages of design. The first survives only as a single drawing and part of a model. The scheme (usually called the *First Model Design*) appears to have consisted of a circular domed vestibule (possibly

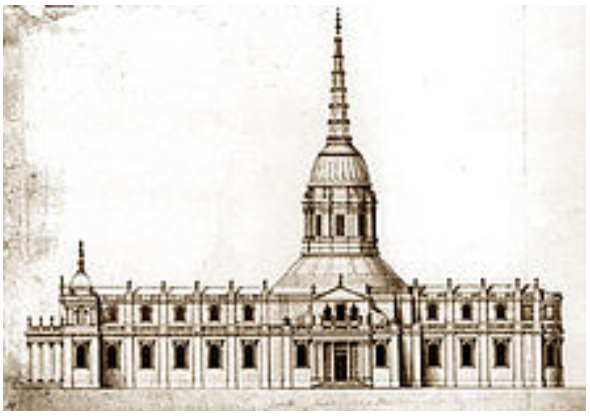
based on the Pantheon in Rome) and a rectangular church of basilica form. The plan may have been influenced by the Temple Church. It was rejected because it was not thought "stately enough" Wren's second design was a Greek cross, which was thought by the clerics not to fulfil the requirements of Anglican liturgy.

Wren's third design is embodied in the "Great Model" of 1673. The model, made of oak and plaster, cost over £500 (approximately £32,000 today) and is over 13 feet (4 m) tall and 21 feet (6 m) long. This design retained the form of the *Greek Cross design* but extended it with a nave. His critics, members of a committee commissioned to rebuild the church and members of the clergy, decried the design as being too dissimilar from other English churches to suggest any continuity within the Church of England. Another problem was that the entire design would have to be completed all at once because of the eight central piers that supported the dome, instead of being completed in stages and opened for use before construction finished, as was customary. Wren considered the Great Model his favourite design, and thought it a reflection of Renaissance beauty. After the Great Model, Wren resolved to make no more models or publicly expose his drawings, which he found to do nothing but "lose time, and subject his business many times, to incompetent judges".

Wren's fourth design is known as the *Warrant design* because it was affixed a Royal warrant for the rebuilding. In this design Wren sought to reconcile Gothic, the predominant style of English churches, to a "better manner of architecture." It has the longitudinal Latin Cross plan of a medieval cathedral. It is of one and a half storeys and has classical porticos at the west and transept ends, influenced by Inigo Jones's addition to Old St Paul's. It is roofed at the crossing by a wide shallow dome supporting a drum with a second cupola from which rises a spire of seven diminishing stages. Vaughan Hart has suggested that influence may have been drawn from the oriental pagoda in the design of the spire. Although not used at St Paul's, the concept was applied in the spire of St Bride's, Fleet Street. This plan was rotated slightly on its site so that it aligned not with true east, but with sunrise on Easter of the year construction began. This small change in configuration was informed by Wren's knowledge of astronomy.



The Greek Cross Design



The Warrant Design

St Paul's, as it was built

Final design

The final design as built differs substantially from the official Warrant design. Wren received permission from the king to make "ornamental changes" to the submitted design, and Wren took great advantage of this. Many of these changes were made over the course of the thirty years as the church was constructed, and the most significant was to the dome: "He raised another structure over the first cupola, a cone of brick, so as to support a stone lantern of an elegant figure... And he covered and hid out of sight the brick cone with another cupola of timber and lead; and between this and the cone are easy stairs that ascend to the lantern" (Christopher Wren, son of Sir Christopher Wren). The final design was strongly rooted in St. Peter's Basilica in Rome. The saucer domes over the nave were inspired by François Mansart's Church of the Val-de-Grâce, which Wren had seen during a trip to Paris in 1665.

The date of the laying of the first stone of the cathedral is disputed. One contemporary account says it was on 21 June 1675, another on 25 June and a third on 28 June. There is, however, general agreement that it was laid in June 1675. Edward Strong later claimed it was laid by his elder brother, Thomas Strong, one of the two master stonemasons appointed by Wren at the beginning of the work.

Cross-section showing the brick cone between the inner and outer domes

William Dickinson's plan for the floor paving (1709-10)

Structural engineering

Wren's challenge was to construct a large cathedral on the relatively weak clay soil of London. St Paul's is unusual among cathedrals in that there is a crypt, the largest in Europe, under the entire building rather than just under the eastern end. The crypt serves a structural purpose. Although it is extensive, half the space of the crypt is taken up by massive piers which spread the weight of the much slimmer piers of the church above. While the towers and domes of most cathedrals are supported on four piers, Wren designed the dome of St Paul's to be supported on eight, achieving a broader distribution of weight at the level of the foundations. The foundations settled as the building progressed, and Wren made structural changes in response.

One of the design problems that confronted Wren was to create a landmark dome, tall enough to visually replace the lost tower of St Paul's, while at the same time appearing visually satisfying when viewed from inside the building. Wren planned a double-shelled dome, as at St Peter's Basilica. His solution to the visual problem was to separate the heights of the inner and outer dome to a much greater extent than had been done by Michelangelo at St Peter's, drafting both as catenary curves, rather than as hemispheres. Between the inner and outer domes, Wren inserted a brick cone which supports both the timbers of the outer, lead covered dome and the weight of the ornate stone lantern that rises above it. Both the cone and the inner dome are 18 inches thick and are supported by wrought iron chains at intervals in the brick cone and around the cornice of the peristyle of the inner dome to prevent spreading and cracking.

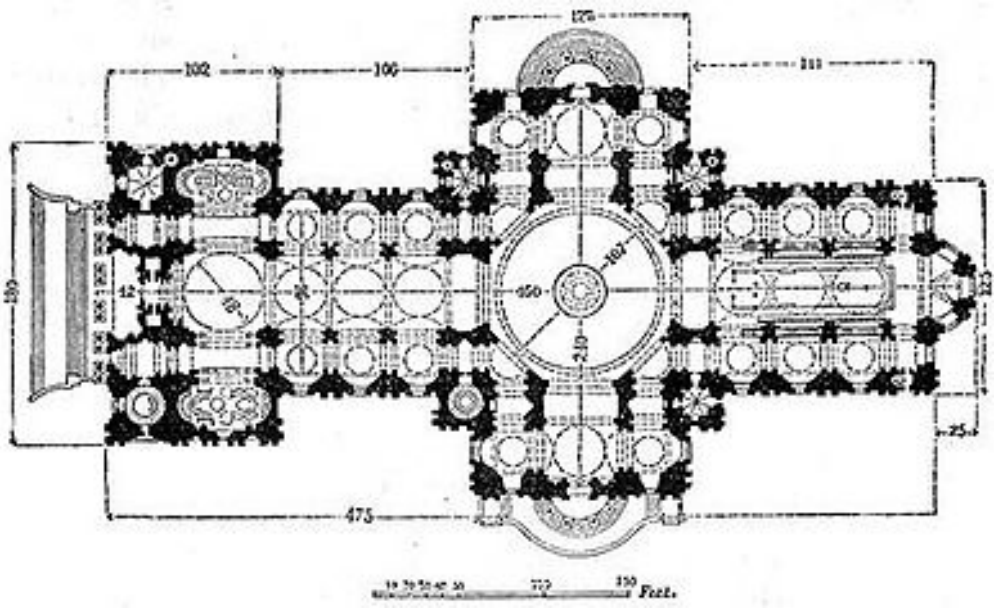
The Warrant Design showed external buttresses on the ground floor level. These were not a classical feature and were one of the first elements Wren changed. Instead he made the walls of the cathedral particularly thick to avoid the need for external buttresses altogether. The clerestorey and vault are reinforced with flying buttresses, which were added at a relatively stage in the design to give extra strength. These are concealed behind the screen wall of the upper storey which was added to keep the building's classical style intact, to add sufficient visual mass to balance the appearance of the dome and which, by its weight, counters the thrust of the buttresses on the lower walls.

Designers, builders and craftsmen

During the extensive period of design and rationalisation Wren employed from 1684 Nicholas Hawksmoor as his principal assistant. Between 1696 and

1711 William Dickinson was measuring clerk. Joshua Marshall (until his early death in 1678), and Thomas and his brother Edward Strong were master masons, the latter two working on the construction for its entirety. John Langland was the master Carpenter for over thirty years. Grinling Gibbons was the chief sculptor, working in both stone on the building itself, including the pediment of the north portal, and wood on the internal fittings. The sculptor Caius Gabriel Cibber created the pediment of the south transept while Francis Bird was responsible for the relief in the west pediment depicting the *Conversion of St Paul*, as well as the seven large statues on the west front. The floor was paved by William Dickinson in black and white marble in 1709-10 Jean Tijou was responsible for the decorative wrought ironwork of gates and balustrades. The ball and cross on the dome were provided by an armorer, Andrew Niblett.

Description



Plan

St Paul's Cathedral is built in a restrained Baroque style which represents Wren's rationalisation of the traditions of English Medieval cathedrals with the inspiration of Palladio, the Classical style of Inigo Jones, the Baroque style of 17th-century Rome, and the buildings by Mansart and others that he had seen in France. It is particularly in its plan that St Paul's reveals Medieval influences. Like the great Medieval cathedrals of York and Winchester, St Paul's is comparatively long for its width, and has strongly projecting transepts. It has much emphasis on its facade, which has been designed to define rather than conceal the form of the building behind it. In plan, the towers jut beyond the width of the aisles as they do at Wells Cathedral. Wren's brother was the Bishop of Ely, and Wren was familiar with the unique octagonal lantern tower over the crossing of Ely Cathedral which spans the aisles as well as the central nave, unlike the central towers and domes of most churches. Wren adapted this characteristic in designing the dome of St Paul's. In section St Paul's also

maintains a medieval form, having the aisles much lower than the nave, and a defined clerestory.

Exterior

From the exterior, the most visible and most notable feature is the dome, which rises 366 feet (108 m) to the cross at its summit, and still dominates views of the City. St Paul's was until the late 20th century, the tallest building on the city skyline, designed to be seen surrounded by the delicate spires of Wren's other city churches. The dome is described by Banister Fletcher as "probably the finest in Europe", by Helen Gardner as "majestic", by Nikolaus Pevsner as "one of the most perfect in the world" and in a statement by John Summerson that Englishmen and "even some foreigners" consider it to be without equal.

The dome

Dome

Wren drew inspiration from Michelangelo's dome of St Peter's Basilica, and that of Mansart's Church of the Val-de-Grâce which he had visited. Unlike those of St Peter's and Val-de-Grâce, the dome of St Paul's rises in two clearly defined storeys of masonry, which, together with a lower unadorned footing, equal a height of about 95 feet. From the time of the *Greek Cross Design* it is clear that Wren favoured a continuous colonnade (*peristyle*) around the drum of the dome, rather than the arrangement of alternating windows and projecting columns that Michelangelo had used and which had also been employed by Mansart. Summerson suggests that he was influence by Bramante's "Tempietto" in the courtyard of San Pietro in Montorio. In the finished structure, Wren creates a diversity and appearance of strength by placing niches between the columns in every fourth opening. The peristyle serves to buttress both the inner dome and the brick cone which rises internally to support the lantern.

Above the peristyle rises the second stage surrounded by a balustraded balcony called the "Stone Gallery". This attic stage is ornamented with alternating pilasters and rectangular windows which are set just below the cornice, creating a sense of lightness. Above this attic rises the dome, covered with lead, and ribbed in accordance with the spacing of the pilasters. It is pierced by eight light wells just below the lantern, but these are barely visible. They allow light to penetrate through openings in the brick cone, which illuminates

the interior apex of this shell, partly visible from within the cathedral through the ocular opening of the lower dome.

The lantern, like the visible masonry of the dome, rises in stages. The most unusual characteristic of this structure is that it is of square plan, rather than circular or octagonal. The tallest stage takes the form of a *tempietto* with four columned porticos facing the cardinal points. Its lowest level is surrounded by the "Golden Gallery" and its upper level supports a small dome from which rises a cross on a golden ball. The total weight of the lantern is about 850 tons.

West front

The West Front

For the Renaissance architect designing the west front of a large church or cathedral, the universal problem was how to use a facade to unite the high central nave with the lower aisles in a visually harmonious whole. Since Alberti's additions to Santa Maria Novella in Florence, this was usually achieved by the simple expedient of linking the sides to the centre with large brackets. This is the solution that Wren saw employed by Mansart at Val-de-Grâce. Another feature employed by Mansart was a boldly projecting Classical portico with paired columns. Wren faced the additional challenge of incorporating towers into the design, as had been planned at St Peter's Basilica. At St Peter's, Carlo Maderno had solved this problem by constructing a narthex and stretching a huge screen facade across it, differentiated at the centre by a pediment. The towers at St Peter's were not built above the parapet.

Wren's solution was to employ a Classical portico, as at Val-de-Grâce, but rising through two storeys, and supported on paired columns. The remarkable feature here is that the lower storey of this portico extends to the full width of the aisles, while the upper section defines the nave that lies behind it. The gaps

between the upper stage of the portico and the towers on either side are bridged by a narrow section of wall with an arch-topped window.

The towers stand outside the width of the aisles, but screen two chapels located immediately behind them. The lower parts of the towers continue the theme of the outer walls, but are differentiated from them in order to create an appearance of strength. The windows of the lower storey are smaller than those of the side walls and are deeply recessed, a visual indication of the thickness of the wall. The paired pilasters at each corner project boldly.

Above the main cornice, which unites the towers with the portico and the outer walls, the details are boldly scaled, in order to read well from the street below and from a distance. The towers rise above the cornice from a square block plinth which is plain apart from large oculi, that on the south being filled by the clock, while that on the north is void. The towers are composed of two complementary elements, a central cylinder rising through the tiers in a series of stacked drums, and paired Corinthian columns at the corners, with buttresses above them, which serve to unify the drum shape with the square plinth on which it stands. The entablature above the columns breaks forward over them to express both elements, tying them together in a single horizontal band. The cap, like a bell-shaped miniature dome, supports a gilded finial, a pineapple supported on four scrolling angled brackets, the topmost expression of the consistent theme.

The transepts each have a semi-circular entrance portico. Wren was inspired in the design by studying engravings of Pietro da Cortona's Baroque facade of Santa Maria della Pace in Rome. These projecting arcs echo the shape of the apse at the eastern end of the building.

Walls

St Paul's from the south-east (2003). The stonework has since been cleaned.

The building is of two storeys of ashlar masonry, above a basement, and surrounded by a balustrade above the upper cornice. The balustrade was added, against Wren's wishes, in 1718. The internal bays are marked externally by paired pilasters with Corinthian capitals at the lower level and Composite at the upper level. Where the building behind is of only one storey (at the aisles of both nave and choir) the upper storey of the exterior wall is sham. It serves a dual purpose of supporting the buttresses of the vault, and providing a satisfying appearance when viewed rising above buildings of the height of the 17th century city. This appearance may still be seen from across the River Thames.

Between the pilasters on both levels are windows. Those of the lower storey have semi-circular heads and are surrounded by continuous mouldings of a Roman style, rising to decorative keystones. Beneath each window is a floral swag by Grinling Gibbons, constituting the finest stone carving on the building and some of the greatest architectural sculpture in England. A frieze with similar swags runs in a band below the cornice, tying the arches of the windows and the capitals. The upper windows are of a restrained Classical form, with pediments set on columns, but are blind and contain niches. Beneath these niches, and in the basement level, are small windows with segmental tops, the glazing of which catches the light and visually links them to the large windows of the aisles. The height from ground level to the top of the parapet is approximately 110 feet.

The nave

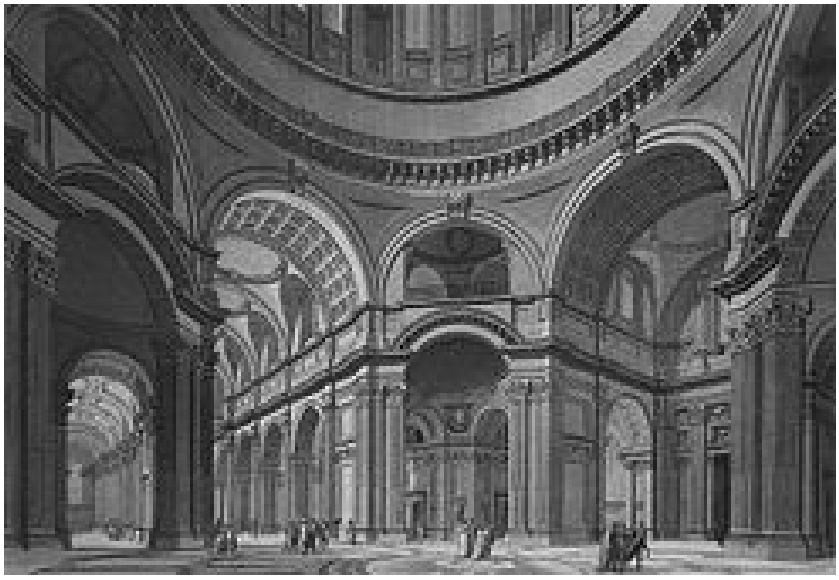
Interior

Internally, St Pauls has a nave and choir each of three bays. The entrance from the west portico is through a square domed narthex, flanked on either side by chapels: the Chapel of St Dunstan to the north and the Chapel of the Order of St Michael and St George to the south side. The nave is 91 feet (28 m) in height and is separated from the aisles by an arcade of piers with attached Corinthian pilasters rising to an entablature. The bays, and therefore the vault

compartments, are rectangular, but Wren has ingeniously roofed these spaces with saucer-shaped domes and surrounded the clerestorey windows with lunettes. The vaults of the choir have been lavishly decorated with mosaics by Sir William Blake Richmond. The dome and the apse of the choir are all approached through wide arches with coffered vaults which contrast with the smooth surface of the domes and punctuate the division between the main spaces. The transept extend to the north and south of the dome and are called (in this instance) the North Choir and the South Choir.

The choir holds the stalls for the clergy and the choir, and the organ. These wooden fittings, including the pulpit and Bishop's throne, were designed in Wren's office and built by joiners. The carvings are the work of Grinling Gibbons who Summerson describes as having "astonishing facility" and suggests that Gibbons aim was to reproduce popular Dutch flower painting in wood. Jean Tijou, a French metalworker, provided various wrought iron and gilt grills, gates and balustrades of elaborate design, of which many pieces have now been combined into the gates near the sanctuary.

The cathedral is some 574 feet (175 m) in length (including the portico of the Great West Door), of which 223 feet (68 m) is the nave and 167 feet (51 m) is the choir. The width of the nave is 121 feet (37 m) and across the transepts is 246 feet (75 m). The cathedral is thus slightly shorter but somewhat wider than Old St Paul's.



Engraving by Thomas Molton (1792) of the space beneath the dome which reveals how Wren succeeded in giving an impression of eight equal arches.

The interior of the dome showing how Thornhill's painting continues an illusion of the real architectural features.

Dome

The main internal space of the cathedral is that under the central dome which extends the full width of the nave and aisles. The dome is supported on pendentives rising between eight arches spanning the nave, choir, transepts, and aisles. The eight piers that carry them are not evenly spaced. Wren has maintained an appearance of eight equal spans by inserting segmental arches carry galleries across the ends of the aisles, and has extended the mouldings of the upper arch to appear equal to the wider arches.

Above the keystones of the arches, at 99 feet (30 m) above the floor and 112 feet (34 m) wide, runs a cornice which supports the *Whispering Gallery* so called because of its acoustic properties: a whisper or low murmur against its wall at any point is audible to a listener with an ear held to the wall at any other point around the gallery. It is reached by 259 steps from ground level.

The dome is raised on a tall drum surrounded by pilasters and pierced with windows in groups of three, separated by eight gilded niches containing statues, and repeating the pattern of the peristyle on the exterior. the dome rises above a gilded cornice at 173 feet (53 m) to a height of 214 feet (65 m). Its painted decoration by Sir James Thornhill shows eight scenes from the life of St Paul set in illusionistic architecture which continues the forms of the eight niches of the drum. At the apex of the dome is an oculus inspired by that of the Pantheon in Rome. Through this hole can be seen the decorated inner surface of the cone which supports the lantern. This upper space is lit by the light wells in the outer dome and openings in the brick cone. Engravings of the Thornhill's paintings were published in 1720.

Apse

The eastern apse extends the width of the choir and is the full height of the main arches across choir and nave. It is decorated with mosaics, in keeping with the choir vaults. The original reredos and high altar were destroyed by bombing in 1940. The present high altar and baldacchino are the work of Godfrey Allen and Stephen Dykes Bower. The apse was dedicated in 1958 as the American Memorial Chapel. It was paid for entirely by donations from British people. The Roll of Honour contains the names of more than 28,000 Americans who gave their lives while on their way to, or stationed in, the United Kingdom during the Second World War. It is in front of the chapel's altar. The three windows of the apse date from 1960 and depict themes of service and sacrifice, while the insignia around the edges represent the American states and the US armed forces. The limewood panelling incorporates a rocket – a tribute to America's achievements in space.

Artworks, tombs and memorials

The choir looking towards the apse

St Paul's at the time of its completion, was adorned by sculpture in stone and wood, most notably that of Grinling Gibbons, by the paintings in the dome by Thornhill, and by Jean Tijou's elaborate metalwork. It has been further enhanced by Sir William Richmond's mosaics and the fittings by Dykes Bower and Godfrey Allen. Other artworks in the cathedral include, in the south aisle, William Holman Hunt's copy of his painting *The Light of the World*, the original

of which hangs in Keble College, Oxford. In the north choir aisle is a limestone sculpture of the *Madonna and Child* by Henry Moore, carved in 1943.

The largest monument in the cathedral is that to the Duke of Wellington by Alfred Stevens. It stands on the north side of the nave and has on top a statue of Wellington astride his horse "Copenhagen". Although the equestrian figure was planned at the outset, objections to the notion of having a horse in the church prevented its installation until 1912. The horse and rider are by John Tweed. The Duke is buried in the crypt.

One of the most remarkable memorials is that of the previous dean and poet, John Donne. Before his death, Donne posed for his own memorial statue and was depicted by the sculptor Nicholas Stone as wrapped in a burial shroud, and standing on a funeral urn. The sculpture, carved around 1630, is the only one to have survived the conflagration of 1666 intact.

At the eastern end of the crypt is the Chapel of the Order of the British Empire, instigated in 1917, and designed by Lord Mottistone. The treasury is also in the crypt but the cathedral has very few treasures as many have been lost, and in 1810 a major robbery took almost all of the remaining precious artefacts.

The crypt also contains over 200 memorials and numerous burials. Christopher Wren was the first person to be interred, in 1723. On the wall above his tomb in the crypt is written, "Lector, si monumentum requiris, circumspice" (*Reader, if you seek his monument, look around you*).

Also in the crypt, directly under the dome, is the tomb of Horatio, Lord Nelson. The marble sarcophagus which holds his remains was made for Cardinal Wolsey but was disused as the cardinal fell from favour. There are many other memorials commemorating the British military, including several lists of servicemen who died in action, the most recent being the Gulf War. Also remembered are Florence Nightingale, William Turner, Hubert Parry, Samuel Johnson, T. E. Lawrence and Sir Alexander Fleming as well as clergy and residents of the local parish. There are lists of the Bishops and cathedral Deans for the last thousand years.

The cathedral has been the site of many famous funerals, including those of Horatio Nelson, the Duke of Wellington, Sir Winston Churchill and George Mallory. In 2013, Lady Margaret Thatcher was given a ceremonial funeral with full military honours.

360° view of the interior near the High Altar.

Clock and bells

The south-west tower contains a clock, of which the present mechanism was built in 1893 by Smith of Derby incorporating a design of escapement by Edmund Denison Beckett similar to that used by Edward Dent on the 'Big Ben' mechanism in 1895. The clock mechanism is 5.8 metres long and is the most recent of the clocks introduced to St Paul's Cathedral over the centuries. Since 1969 the clock has been electrically wound with equipment designed and installed by Smith of Derby, relieving the clock custodian from the work of cranking up the heavy drive weights.

The south-west tower also contains four bells of which **Great Paul**, cast in 1881 by Taylor's bell foundry of Loughborough, Leicestershire, at 16½ tons is the largest bell in the British Isles. This bell has traditionally sounded at 1 o'clock each day. The clock bells included Great Tom which was moved from St Stephen's Chapelat the Palace of Westminster and has been recast several times, the last time by Richard Phelps. It chimes the hour and is traditionally tolled on occasions of a death in the royal family, the Bishop of London, or the Lord Mayor of London, although an exception was made at the death of the US president James Garfield. It was last tolled for the death of Queen Elizabeth, the Queen Mother, in 2002. In 1717, Richard Phelps cast two more bells that were added as "quarter jacks" that ring on the quarter-hour. Still in use today, the first weighs 13 long hundredweights (1,500 lb; 660 kg), is 41 inches (1,000 mm) in diameter and is tuned to A flat; the second weighs 35 long hundredweights (3,900 lb; 1,800 kg) and is 58 inches (1,500 mm) in diameter and is tuned to E flat.

The north-west tower contains a peal of 12 bells by Taylor of Loughborough hung for change ringing and the original service or "Communion Bell" dating from 1700 and known as "the Banger" which is rung before 8.00 am services.

The south-west tower

Education, tourism and the arts

The gilt statue at the top of St Paul's Cross in the cathedral precinct

Interpretation Project

The Interpretation Project is a long term project concerned with bringing St Paul's to life for all its visitors. In 2010, the Dean and Chapter of St Paul's opened St Paul's Oculus, a 270° film experience that brings 1400 years of history to life. Located in the former Treasury in the crypt, the film takes visitors on a journey through the history and daily life of St Paul's Cathedral. Oculus was funded by American Express Company in partnership with the World Monuments Fund, J. P . Morgan, the Garfield Weston Trust for St Paul's Cathedral, the City of London Endowment Trust and AIG.

In 2010, new touchscreen multimedia guides were also launched. These guides are included in the price of admission. Visitors can discover the cathedral's history, architecture and daily life of a busy working church with these new multimedia guides. They are available in 12 different languages: English, French, German, Italian, Spanish, Portuguese, Polish, Russian, Mandarin, Japanese, Korean and British Sign Language (BSL). The guides have fly-through videos of the dome galleries and zoomable close-ups of the ceiling

mosaics, painting and photography. Interviews and commentary from experts include the Dean of St Paul's, conservation team and the Director of Music. Archive film footage includes major services and events from the cathedral's history.

Charges for sightseers

There is a £16.00 charge for admission to sightseers (£14.50 when purchased online). Those attending services do so at no cost. People seeking a place to be quiet and pray are admitted to St Dunstan's Chapel free of charge. Admission on Sundays for all services is free and there is no sightseeing. The cathedral explains that St Paul's receives little regular or significant funding from the Crown, Church or the State and claims to rely on the income generated by tourism to allow the building to continue to function as a centre for Christian worship, as well as to cover general maintenance and repair work.

St Paul's Cathedral Arts Project

The St Paul's Cathedral Arts Project is an ongoing programme which seeks to explore the encounter between art and faith. Projects have included installations by Antony Gormley, Rebecca Horn, Yoko Ono and Martin Firrell.

Internationally acclaimed artist Bill Viola has been commissioned to create two altarpieces for permanent display in St Paul's Cathedral. The project commenced production in mid-2009 with completion in early 2012. Following the extensive programme of cleaning and repair of the interior of St Paul's, completed in 2005, Bill Viola has been commissioned to create two altarpieces on the themes of Mary and Martyrs. These two multi-screen video installations will be permanently located at the end of the Quire aisles, flanking the High Altar of the Cathedral and the American Memorial Chapel where US Service men and women who gave their lives in the Second World War are commemorated. Each work will employ an arrangement of multiple plasma screen panels configured in a manner similar to historic altarpieces. The screens will be mounted on hinged panels, allowing them to be closed.

In Summer 2010, St Paul's chose two new works by the British artist Mark Alexander to be hung either side of the nave. Both entitled Red Mannheim, Alexander's large red silkscreens are inspired by the Mannheim Cathedral altarpiece (1739–41), which was damaged by bombing in the Second World War. The original sculpture depicts Christ on the cross, surrounded by a familiar retinue of mourners. Rendered in splendid giltwood, with Christ's wracked body sculpted in relief, and the flourishes of flora and incandescent rays from heaven, this masterpiece of the German Rococo is an object of ravishing beauty and intense piety.

In March 2010, Flare II, a sculpture by Antony Gormley, was installed in the dramatic setting of the Geometric Staircase.

In 2007, Dean and Chapter commissioned public artist Martin Firrell to create a major public artwork to mark the 300th anniversary of the topping-out of Wren's building. The Question Mark Inside consisted of digital text

projections to the cathedral dome, West Front and inside onto the Whispering Gallery. The text was based on blog contributions by the general public as well as interviews conducted by the artist and the artist's own views. The project presented a stream of possible answers to the question: 'what makes life meaningful and purposeful, and what does St Paul's mean in that contemporary context?' The Question Mark Inside opened on 8 November 2008 and ran for eight nights.

Текст 5

1. Прочитайте текст.
2. Напишите аннотацию текста на русском языке.
3. Составьте реферат на английском языке.

St. Peter's Basilica

St. Peter's Basilica (Latin: *Basilica Sancti Petri*; Italian: *Basilica di San Pietro in Vaticano*) is a Late Renaissance church located within Vatican City.

Designed principally by Donato Bramante, Michelangelo, Carlo Maderno and Gian Lorenzo Bernini, St. Peter's is the most renowned work of Renaissance architecture and remains one of the largest churches in the world. While it is neither the mother church of the Roman Catholic Church nor the cathedral of the Bishop of Rome, St. Peter's is regarded as one of the holiest Catholic sites. It has been described as "holding a unique position in the Christian world" and as "the greatest of all churches of Christendom".

By Roman Catholic tradition, the basilica is the burial site of its namesake Saint Peter, one of the twelve apostles of Jesus and, also according to tradition, the first Bishop of Rome and therefore first in the line of the papal succession. Tradition and some historical evidence hold that Saint Peter's tomb is directly below the altar of the basilica. For this reason, many Popes have been interred at St. Peter's since the Early Christian period. There has been a church on this site since the time of Constantine the Great. Construction of the present basilica, replacing the Old St. Peter's Basilica of the 4th century, began on 18 April 1506 and was completed on 18 November 1626.

St. Peter's is famous as a place of pilgrimage, for its liturgical functions. Because of its location in the Vatican, the Pope presides at a number of services throughout the year, drawing audiences of 15,000 to over 80,000 people, either within the Vatican Basilica, or in St. Peter's Square. St. Peter's has many strong historical associations, with the Early Christian church, the papacy, the Protestant Reformation and Counter-reformation, and with numerous artists, most significantly Michelangelo. As a work of architecture, it is regarded as the greatest building of its age. St. Peter's is one of the four churches of Rome that

hold the rank of Major Basilica. Contrary to popular misconception, it is not a cathedral as it is not the seat of a bishop; the *cathedra* of the Pope (as Bishop of Rome) is located in the Archbasilica of St. John Lateran.

Overview

St. Peter's Basilica from ponte Umberto I, on River Tiber. The iconic dome dominates the skyline of Rome.

St. Peter's is a church in the Renaissance style located in Rome west of the River Tiber and near the Janiculum Hill and Hadrian's Mausoleum. Its central dome dominates the skyline of Rome. The basilica is approached via St. Peter's Square, a forecourt in two sections, both surrounded by tall colonnades. The first space is oval and the second trapezoid. The façade of the basilica, with a giant order of columns, stretches across the end of the square and is approached by steps on which stand two 5.55 metres (18.2 ft) statues of the 1st century apostles to Rome, Saints Peter and Paul.

The basilica is cruciform in shape, with an elongated nave in the Latin cross form but the early designs were for a centrally planned structure and this is still in evidence in the architecture. The central space is dominated both externally and internally by one of the largest domes in the world. The entrance is through a narthex, or entrance hall, which stretches across the building. One of the decorated bronze doors leading from the narthex is the Holy Door, only opened in Holy Years.

St Peter's, Bernini's colonnade and Maderno's fountain

The interior is of vast dimensions when compared with other churches. One author wrote: "Only gradually does it dawn upon us – as we watch people draw near to this or that monument, strangely they appear to shrink; they are, of course, dwarfed by the scale of everything in the building. This in its turn overwhelms us."

The nave which leads to the central dome is in three bays, with piers supporting a barrel-vault, the highest of any church. The nave is framed by wide aisles which have a number of chapels off them. There are also chapels surrounding the dome. Moving around the basilica in a clockwise direction they are: The Baptistery, the Chapel of the Presentation of the Virgin, the larger Choir Chapel, the Clementine Chapel with the altar of St Gregory, the Sacristy Entrance, the left transept with altars to the Crucifixion of St Peter, St Joseph and St Thomas, the altar of the Sacred Heart, the Chapel of the Madonna of Colonna, the altar of St. Peter and the Paralytic, the apse with St. Peter's Cathedra, the altar of St. Peter raising Tabitha, the altar of the Archangel Michael, the altar of the Navicella, the right transept with altars of St Erasmus, Saints Processo and Martiniano, and St Wenceslas, the altar of St Basil, the Gregorian Chapel with the altar of the Madonna of Succour, the larger Chapel of the Holy Sacrament, the Chapel of St Sebastian and the Chapel of the Pietà. At the heart of the basilica, beneath the high altar, is the *Confessio* or *Chapel of the Confession*, in reference to the confession of faith by St. Peter, which led to his martyrdom. Two curving marble staircases lead to this underground chapel at the level of the Constantinian church and immediately above the burial place of Saint Peter.

The entire interior of St. Peter's is lavishly decorated with marble, reliefs, architectural sculpture and gilding. The basilica contains a large number of tombs of popes and other notable people, many of which are considered

outstanding artworks. There are also a number of sculptures in niches and chapels, including Michelangelo's *Pietà*. The central feature is a baldachin, or canopy over the Papal Altar, designed by Gian Lorenzo Bernini. The sanctuary culminates in a sculptural ensemble, also by Bernini, and containing the symbolic *Chair of Saint Peter*.

One observer wrote: "St Peter's Basilica is the reason why Rome is still the center of the civilized world. For religious, historical, and architectural reasons it by itself justifies a journey to Rome, and its interior offers a palimpsest of artistic styles at their best..."

The American philosopher Ralph Waldo Emerson described St. Peter's as "an ornament of the earth ... the sublime of the beautiful."

Panorama of St. Peter's Square

Status

Bishops at Vatican Council II in 1961

St. Peter's Basilica is one of four Papal Basilicas or Major Basilicas of Rome the others being the Basilica of St. John Lateran, Santa Maria Maggiore and St. Paul outside the Walls. It is the most prominent building in the Vatican City. Its dome is a dominant feature of the skyline of Rome. Probably the largest church in Christendom, it covers an area of 2.3 hectares (5.7 acres). One of the holiest sites of Christianity in the Catholic Tradition, it is traditionally the burial site of its titular Saint Peter, who was one of the twelve apostles of Jesus and, according to Catholic Tradition, also the first Bishop of Antioch and later first Bishop of Rome, the first Pope. Although the New Testament does not mention Peter's martyrdom in Rome, Catholic tradition, based on the writings of the

Fathers of the Church, holds that his tomb is below the baldachin and altar; for this reason, many Popes have, from the early years of the Church, been buried there. Construction of the current basilica, over the old Constantinian basilica, began on 18 April 1506. At length on 18 November 1626, Pope Urban VIII solemnly dedicated the church.

St. Peter's Basilica is neither the Pope's official seat nor first in rank among the Major Basilicas of Rome. This honour is held by the Pope's cathedral, the Archbasilica of St. John Lateran which is the mother church of all churches and parishes in communion with the Roman Catholic Church. However, St. Peter's is most certainly the Pope's principal church, as most Papal ceremonies take place there due to its size, proximity to the Papal residence, and location within the Vatican City walls. The "Chair of Saint Peter" or cathedra, an ancient chair sometimes presumed to have been used by Saint Peter himself, but which was a gift from Charles the Bald and used by various popes, symbolises the continuing line of apostolic succession from Saint Peter to the present pope. It occupies an elevated position in the apse, supported symbolically by the Doctors of the Church, and enlightened symbolically by the Holy Spirit.

History

Saint Peter's burial site

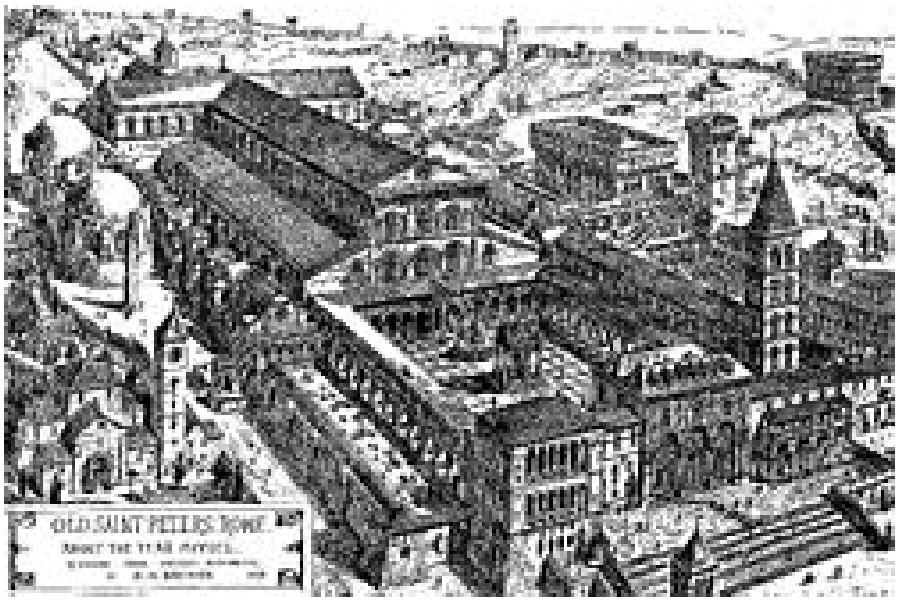
Crepuscular rays are regularly seen in St. Peter's Basilica at certain times each day.

After the crucifixion of Jesus in the second quarter of the 1st century AD, it is recorded in the Biblical book of the Acts of the Apostles that one of his twelve disciples, Simon known as Saint Peter, a fisherman from Galilee, took a leadership position among Jesus' followers and was of great importance in the founding of the Christian Church. The name Peter is "Petrus" in Latin and "Petros" in Greek, deriving from "*petra*" which means "stone" or "rock" in Greek.

It is believed by a long tradition that Peter, after a ministry of about thirty years, travelled to Rome and met his martyrdom there in the year 64 AD during the reign of the Roman Emperor Nero. His execution was one of the many martyrdoms of Christians following the Great Fire of Rome. According to Origen, Peter was crucified head downwards, by his own request because he considered himself unworthy to die in the same manner as Jesus. The crucifixion took place near an ancient Egyptian obelisk in the Circus of Nero. The obelisk now stands in Saint Peter's Square and is revered as a "witness" to Peter's death. It is one of several ancient Obelisks of Rome.

According to tradition, Peter's remains were buried just outside the Circus, on the Mons Vaticanus across the Via Cornelia from the Circus, less than 150 metres (490 ft) from his place of death. The Via Cornelia (which may have been known by another name to the ancient Romans) was a road which ran east-to-west along the north wall of the Circus on land now covered by the southern portions of the Basilica and Saint Peter's Square. Peter's grave was initially marked simply by a red rock, symbolic of his name. A shrine was built on this site some years later. Almost three hundred years later, Old St. Peter's Basilica was constructed over this site.

In 1939, in the reign of Pope Pius XII, 10 years of archaeological research began, under the crypt of the basilica, an area inaccessible since the 9th century. Indeed, the area now covered by the Vatican City had been a cemetery for some years before the Circus of Nero was built. It was a burial ground for the numerous executions in the Circus and contained many Christian burials, perhaps because for many years after the burial of Saint Peter many Christians chose to be buried near him. The excavations revealed the remains of shrines of different periods at different levels, from Clement VIII (1594) to Callixtus II (1123) and Gregory I (590–604), built over an aedicula containing fragments of bones that were folded in a tissue with gold decorations, tinted with the precious murex purple. Although it could not be determined with certainty that the bones were those of Peter, the rare vestments suggested a burial of great importance. On 23 December 1950, in his pre-Christmas radio broadcast to the world, Pope Pius XII announced the discovery of Saint Peter's tomb.



A conjectural view of the Basilica by H. W. Brewer, 1891

Old St. Peter's Basilica

Old St. Peter's Basilica was the fourth-century church begun by the Emperor Constantine the Great between 319 and 333 AD. It was of typical basilical Latin Cross form with an apsidal end at the chancel, a wide nave and two aisles on either side. It was over 103.6 metres (340 ft) long, and the entrance was preceded by a large colonnaded atrium. This church had been built over the small shrine believed to mark the burial place of St. Peter. It contained a very large number of burials and memorials, including those of most of the popes from St. Peter to the 15th century. Like all of the earliest churches in Rome, both this church and its successor had the entrance to the east and the apse at the west end of the building. Since the construction of the current basilica, the name *Old St. Peter's Basilica* has been used for its predecessor to distinguish the two buildings.

The plan to rebuild

By the end of the 15th century, having been neglected during the period of the Avignon Papacy, the old basilica was in bad repair. It appears that the first pope to consider rebuilding, or at least making radical changes was Pope Nicholas V (1447–55). He commissioned work on the old building from Leone Battista Alberti and Bernardo Rossellino and also had Rossellino design a plan for an entirely new basilica, or an extreme modification of the old. His reign was frustrated by political problems and when he died, little had been achieved. He had, however, ordered the demolition of the Colosseum and by the time of his death, 2,522 cartloads of stone had been transported for use in the new building.

Pope Julius II planned far more for St Peter's than Nicholas V's program of repair or modification. Julius was at that time planning his own tomb, which was to be designed and adorned with sculpture by Michelangelo and placed within St Peter's. In 1505 Julius made a decision to demolish the ancient basilica and replace it with a monumental structure to house his enormous tomb and

"aggrandize himself in the popular imagination". A competition was held, and a number of the designs have survived at the Uffizi Gallery. A succession of popes and architects followed in the next 120 years, their combined efforts resulting in the present building. The scheme begun by Julius II continued through the reigns of Leo X (1513–1521), Hadrian VI (1522–1523). Clement VII (1523–1534), Paul III (1534–1549), Julius III (1550–1555), Marcellus II (1555), Paul IV (1555–1559), Pius IV (1559–1565), Pius V (saint) (1565–1572), Gregory XIII (1572–1585), Sixtus V (1585–1590), Urban VII (1590),Gregory XIV (1590–1591), Innocent IX (1591), Clement VIII (1592–1605), Leo XI (1605), Paul V (1605–1621), Gregory XV (1621–1623), Urban VIII (1623–1644) and Innocent X (1644–1655).

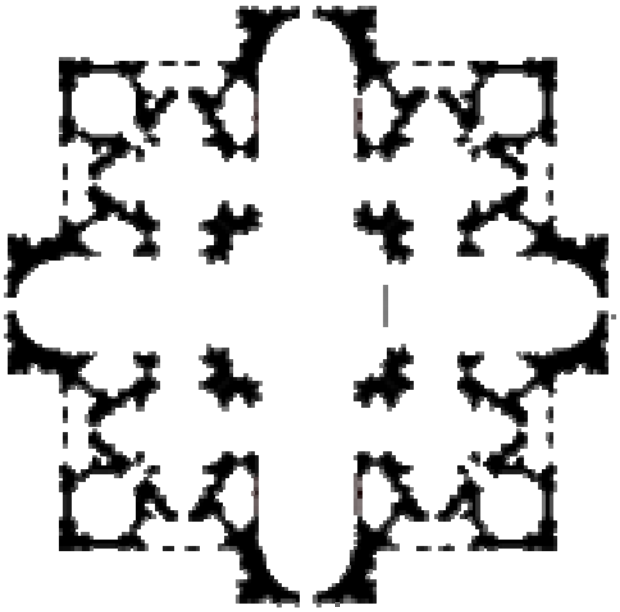
Financing with indulgences

One method employed to finance the building of St. Peter's Basilica was the granting of indulgences in return for contributions. A major promoter of this method of fund-raising was Albrecht, Archbishop of Mainz and Magdeburg, who had to clear debts owed to the Roman Curia by contributing to the rebuilding program. To facilitate this, he appointed the German Dominican preacher Johann Tetzel, whose salesmanship provoked a scandal.

A German Augustinian priest, Martin Luther, wrote to Archbishop Albrecht arguing against this "selling of indulgences". He also included his "Disputation of Martin Luther on the Power and Efficacy of Indulgences", which came to be known as *The 95 Theses*. This became a factor in starting the Reformation, the birth of Protestantism.

Architecture

Successive plans



Bramante's plan

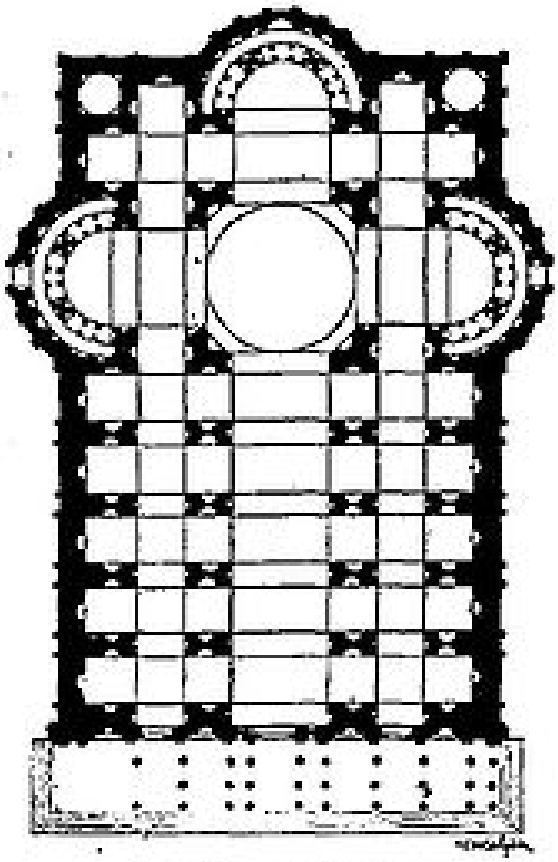
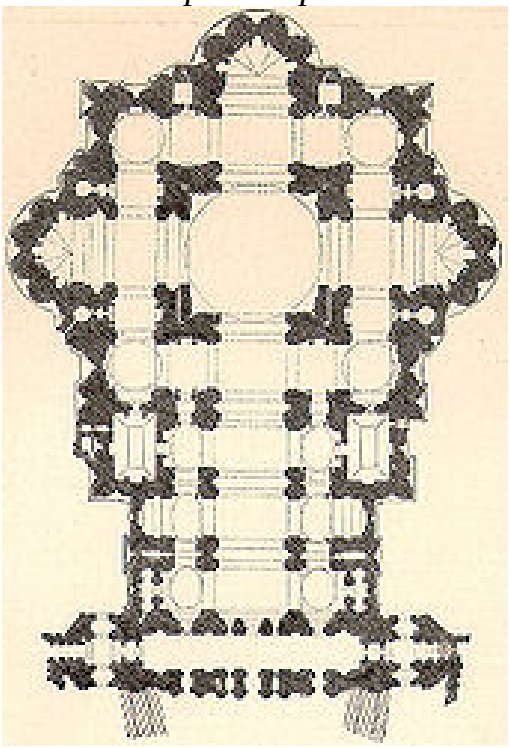


Fig. 8. — Saint-Pierre.
(Plan de Raphaël.)

Raphael's plan



Michelangelo's plan, extended with Maderno's nave and façade

Pope Julius' scheme for the grandest building in Christendom was the subject of a competition for which a number of entries remain intact in the Uffizi Gallery, Florence. It was the design of Donato Bramante that was selected, and for which the foundation stone was laid in 1506. This plan was in the form of an enormous Greek Cross with a dome inspired by that of the huge circular Roman temple, the Pantheon. The main difference between Bramante's design and that of the Pantheon is that where the dome of the Pantheon is supported by a continuous wall, that of the new basilica was to be supported only on four large piers. This feature was maintained in the ultimate design. Bramante's dome was to be surmounted by a lantern with its own small dome but otherwise very similar in form to the Early Renaissance lantern of Florence Cathedral designed for Brunelleschi's dome by Michelozzo.

Bramante had envisioned that the central dome be surrounded by four lower domes at the diagonal axes. The equal chancel, nave and transept arms were each to be of two bays ending in an apse. At each corner of the building was to stand a tower, so that the overall plan was square, with the apses projecting at the cardinal points. Each apse had two large radial buttresses, which squared off its semi-circular shape.

When Pope Julius died in 1513, Bramante was replaced with Giuliano da Sangallo, Fra Giocondo and Raphael. Sangallo and Fra Giocondo both died in 1515, Bramante himself having died the previous year. The main change in Raphael's plan is the nave of five bays, with a row of complex apsidal chapels off the aisles on either side. Raphael's plan for the chancel and transepts made the squareness of the exterior walls more definite by reducing the size of the towers, and the semi-circular apses more clearly defined by encircling each with an ambulatory.

In 1520 Raphael also died, aged 37, and his successor Baldassare Peruzzi maintained changes that Raphael had proposed to the internal arrangement of the three main apses, but otherwise reverted to the Greek Cross plan and other features of Bramante. This plan did not go ahead because of various difficulties of both Church and state. In 1527 Rome was sacked and plundered by Emperor Charles V. Peruzzi died in 1536 without his plan being realized.

At this point Antonio da Sangallo the Younger submitted a plan which combines features of Peruzzi, Raphael and Bramante in its design and extends the building into a short nave with a wide façade and portico of dynamic projection. His proposal for the dome was much more elaborate of both structure and decoration than that of Bramante and included ribs on the exterior. Like Bramante, Sangallo proposed that the dome be surmounted by a lantern which he redesigned to a larger and much more elaborate form. Sangallo's main practical contribution was to strengthen Bramante's piers which had begun to crack.

On 1 January 1547 in the reign of Pope Paul III, Michelangelo, then in his seventies, succeeded Sangallo the Younger as "Capomaestro", the

superintendent of the building program at St Peter's. He is to be regarded as the principal designer of a large part of the building as it stands today, and as bringing the construction to a point where it could be carried through. He did not take on the job with pleasure; it was forced upon him by Pope Paul, frustrated at the death of his chosen candidate, Giulio Romano and the refusal of Jacopo Sansovino to leave Venice. Michelangelo wrote "I undertake this only for the love of God and in honour of the Apostle." He insisted that he should be given a free hand to achieve the ultimate aim by whatever means he saw fit.

Michelangelo's contribution

Michelangelo took over a building site at which four piers, enormous beyond any constructed since ancient Roman times, were rising behind the remaining nave of the old basilica. He also inherited the numerous schemes designed and redesigned by some of the greatest architectural and engineering minds of the 16th century. There were certain common elements in these schemes. They all called for a dome to equal that engineered by Brunelleschi a century earlier and which has since dominated the skyline of Renaissance Florence, and they all called for a strongly symmetrical plan of either Greek Cross form, like the iconic St. Mark's Basilica in Venice, or of a Latin Cross with the transepts of identical form to the chancel, as at Florence Cathedral.

Even though the work had progressed only a little in 40 years, Michelangelo did not simply dismiss the ideas of the previous architects. He drew on them in developing a grand vision. Above all, Michelangelo recognized the essential quality of Bramante's original design. He reverted to the Greek Cross and, as Helen Gardner expresses it: "Without destroying the centralising features of Bramante's plan, Michelangelo, with a few strokes of the pen converted its snowflake complexity into massive, cohesive unity."

As it stands today, St. Peter's has been extended with a nave by Carlo Maderno. It is the chancel end (the ecclesiastical "Eastern end") with its huge centrally placed dome that is the work of Michelangelo. Because of its location within the Vatican State and because the projection of the nave screens the dome from sight when the building is approached from the square in front of it, the work of Michelangelo is best appreciated from a distance. What becomes apparent is that the architect has greatly reduced the clearly defined geometric forms of Bramante's plan of a square with square projections, and also of Raphael's plan of a square with semi-circular projections. Michelangelo has blurred the definition of the geometry by making the external masonry of massive proportions and filling in every corner with a small vestry or stairwell. The effect created is of a continuous wall-surface that is folded or fractured at different angles, but lacks the right-angles which usually define change of direction at the corners of a building. This exterior is surrounded by a giant order of Corinthian pilasters all set at slightly different angles to each other, in keeping with the ever-changing angles of the wall's surface. Above them the

huge cornice ripples in a continuous band, giving the appearance of keeping the whole building in a state of compression.

Dome – successive and final designs

Bramante's dome

The dome of St. Peter's rises to a total height of 136.57 metres (448.1 ft) from the floor of the basilica to the top of the external cross. It is the tallest dome in the world. Its internal diameter is 41.47 metres (136.1 ft), slightly smaller than two of the three other huge domes that preceded it, those of the Pantheon of Ancient Rome, 43.3 metres (142 ft), and Florence Cathedral of the Early Renaissance, 44 metres (144 ft). It has a greater diameter by approximately 30 feet (9.1 m) than Constantinople's Hagia Sophia church, completed in 537. It was to the domes of the Pantheon and Florence duomo that the architects of St. Peter's looked for solutions as to how to go about building what was conceived, from the outset, as the greatest dome of Christendom.

Bramante and Sangallo, 1506 and 1513

The dome of the Pantheon stands on a circular wall with no entrances or windows except a single door. The whole building is as high as it is wide. Its dome is constructed in a single shell of concrete, made light by the inclusion of a large amount of the volcanic stones tuff and pumice. The inner surface of the dome is deeply coffered which has the effect of creating both vertical and horizontal ribs, while lightening the overall load. At the summit is an ocular opening 8 metres (26 ft) across which provides light to the interior.

Bramante's plan for the dome of St. Peter's (1506) follows that of the Pantheon very closely, and like that of the Pantheon, was designed to be

constructed in tufa concrete for which he had rediscovered a formula. With the exception of the lantern that surmounts it, the profile is very similar, except that in this case the supporting wall becomes a drum raised high above ground level on four massive piers. The solid wall, as used at the Pantheon, is lightened at St. Peter's by Bramante piercing it with windows and encircling it with a peristyle.

Sangallo's design

In the case of Florence Cathedral, the desired visual appearance of the pointed dome existed for many years before Brunelleschi made its construction feasible. Its double-shell construction of bricks locked together in herringbone pattern (re-introduced from Byzantine architecture), and the gentle upward slope of its eight stone ribs made it possible for the construction to take place without the massive wooden formwork necessary to construct hemispherical arches. While its appearance, with the exception of the details of the lantern, is entirely Gothic, its engineering was highly innovative, and the product of a mind that had studied the huge vaults and remaining dome of Ancient Rome.

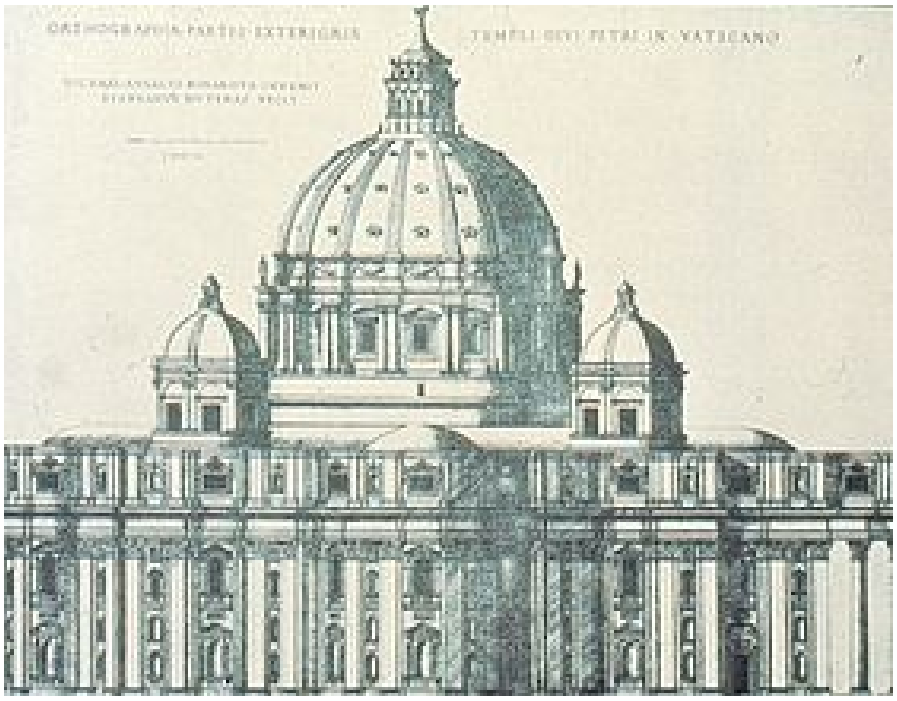
Sangallo's plan (1513), of which a large wooden model still exists, looks to both these predecessors. He realised the value of both the coffering at the Pantheon and the outer stone ribs at Florence Cathedral. He strengthened and extended the peristyle of Bramante into a series of arched and ordered openings around the base, with a second such arcade set back in a tier above the first. In his hands, the rather delicate form of the lantern, based closely on that in Florence, became a massive structure, surrounded by a projecting base, a peristyle and surmounted by a spire of conic form. According to James Lees-Milne the design was "too eclectic, too pernickety and too tasteless to have been a success".

Michelangelo and Giacomo della Porta, 1547 and 1585

St. Peter's Basilica from Castel Sant'Angelo showing the dome rising behind Maderno's façade.

Michelangelo redesigned the dome in 1547, taking into account all that had gone before. His dome, like that of Florence, is constructed of two shells of brick, the outer one having 16 stone ribs, twice the number at Florence but far fewer than in Sangallo's design. As with the designs of Bramante and Sangallo, the dome is raised from the piers on a drum. The encircling peristyle of Bramante and the arcade of Sangallo are reduced to 16 pairs of Corinthian columns, each of 15 metres (49 ft) high which stand proud of the building, connected by an arch. Visually they appear to buttress each of the ribs, but structurally they are probably quite redundant. The reason for this is that the dome is ovoid in shape, rising steeply as does the dome of Florence Cathedral, and therefore exerting less outward thrust than does a hemispherical dome, such as that of the Pantheon, which, although it is not buttressed, is countered by the downward thrust of heavy masonry which extends above the circling wall.

The ovoid profile of the dome has been the subject of much speculation and scholarship over the past century. Michelangelo died in 1564, leaving the drum of the dome complete, and Bramante's piers much bulkier than originally designed, each 18 metres (59 ft) across. Following his death, the work continued under his assistant Jacopo Barozzi da Vignola with Giorgio Vasari appointed by Pope Pius V as a watchdog to make sure that Michelangelo's plans were carried out exactly. Despite Vignola's knowledge of Michelangelo's intentions, little happened in this period. In 1585 the energetic Pope Sixtus appointed Giacomo della Porta who was to be assisted by Domenico Fontana. The five-year reign of Sixtus was to see the building advance at a great rate.



The engraving by Stefan du Pérac was published in 1569, five years after the death of Michelangelo

Michelangelo left a few drawings, including an early drawing of the dome, and some drawings of details. There were also detailed engravings published in 1569 by Stefan du Pérac who claimed that they were the master's final solution. Michelangelo, like Sangallo before him, also left a large wooden model. Giacomo della Porta subsequently altered this model in several ways, in keeping with changes that he made to the design. Most of these changes were of a cosmetic nature, such as the adding of lion's masks over the swags on the drum in honour of Pope Sixtus and adding a circlet of finials around the spire at the top of the lantern, as proposed by Sangallo. The major change that was made to the model, either by della Porta, or Michelangelo himself before his death, was to raise the outer dome higher above the inner one.

A drawing by Michelangelo indicates that his early intentions were towards an ovoid dome, rather than a hemispherical one. In an engraving in Galasso Alghisi' treatise (1563), the dome may be represented as ovoid, but the perspective is ambiguous. Stefan du Pérac's engraving (1569) shows a hemispherical dome, but this was perhaps an inaccuracy of the engraver. The profile of the wooden model is more ovoid than that of the engravings, but less so than the finished product. It has been suggested that Michelangelo on his death bed reverted to the more pointed shape. However Lees-Milne cites Giacomo della Porta as taking full responsibility for the change and as indicating to Pope Sixtus that Michelangelo was lacking in the scientific understanding of which he himself was capable.

Helen Gardner suggests that Michelangelo made the change to the hemispherical dome of lower profile in order to establish a balance between the dynamic vertical elements of the encircling giant order of pilasters and a more

static and reposeful dome. Gardner also comments "The sculpturing of architecture [by Michelangelo]... here extends itself up from the ground through the attic stories and moves on into the drum and dome, the whole building being pulled together into a unity from base to summit."

It is this sense of the building being sculptured, unified and "pulled together" by the encircling band of the deep cornice that led Eneide Mignacca to conclude that the ovoid profile, seen now in the end product, was an essential part of Michelangelo's first (and last) concept. The sculptor/architect has, figuratively speaking, taken all the previous designs in hand and compressed their contours as if the building were a lump of clay. The dome *must* appear to thrust upwards because of the apparent pressure created by flattening the building's angles and restraining its projections. If this explanation is the correct one, then the profile of the dome is not merely a structural solution, as perceived by Giacomo della Porta; it is part of the integrated design solution that is about visual tension and compression. In one sense, Michelangelo's dome may appear to look backward to the Gothic profile of Florence Cathedral and ignore the Classicism of the Renaissance, but on the other hand, perhaps more than any other building of the 16th century, it prefigures the architecture of the Baroque.

Completion

The dome was brought to completion by Giacomo della Porta and Fontana.

Giacomo della Porta and Fontana brought the dome to completion in 1590, the last year of the reign of Sixtus V. His successor, Gregory XIV, saw Fontana complete the lantern and had an inscription to the honour of Sixtus V placed around its inner opening. The next pope, Clement VIII, had the cross raised into place, an event which took all day, and was accompanied by the ringing of the

bells of all the city's churches. In the arms of the cross are set two lead caskets, one containing a fragment of the True Cross and a relic of St. Andrew and the other containing medallions of the Holy Lamb.

In the mid-18th century, cracks appeared in the dome, so four iron chains were installed between the two shells to bind it, like the rings that keep a barrel from bursting. As many as ten chains have been installed at various times, the earliest possibly planned by Michelangelo himself as a precaution, as Brunelleschi did at Florence Cathedral.

Discovery of Michelangelo draft

On 7 December 2007, a fragment of a red chalk drawing of a section of the dome of Saint Peter's, almost certainly by the hand of Michelangelo, was discovered in the Vatican archives. The drawing shows a small precisely drafted section of the plan of the entabulature above two of the radial columns of the cupola drum. Michelangelo is known to have destroyed thousands of his drawings before his death. The rare survival of this example is probably due to its fragmentary state and the fact that detailed mathematical calculations had been made over the top of the drawing.

The nave looking towards the entrance

The change of plan

On 18 February 1606, under Pope Paul V, the dismantling of the remaining parts of the Constantinian basilica began. The marble cross that had been set at the top of the pediment by Pope Sylvester and Constantine the Great was lowered to the ground. The timbers were salvaged for the roof of the Borghese Palace and two rare black marble columns, the largest of their kind, were

carefully stored and later used in the narthex. The tombs of various popes were opened, treasures removed and plans made for reinterment in the new basilica.

The Pope had appointed Carlo Maderno in 1602. He was a nephew of Domenico Fontana and had demonstrated himself as a dynamic architect. Maderno's idea was to ring Michelangelo's building with chapels, but the Pope was hesitant about deviating from the master's plan, even though he had been dead for forty years. The *Fabbrica* or building committee, a group drawn from various nationalities and generally despised by the Curia who viewed the basilica as belonging to Rome rather than Christendom, were in a quandary as to how the building should proceed. One of the matters that influenced their thinking was the Counter-Reformation which increasingly associated a Greek Cross plan with paganism and saw the Latin Cross as truly symbolic of Christianity.

Another influence on the thinking of both the Fabbrica and the Curia was a certain guilt at the demolition of the ancient building. The ground on which it and its various associated chapels, vestries and sacristies had stood for so long was hallowed. The only solution was to build a nave that encompassed the whole space. In 1607 a committee of ten architects was called together, and a decision was made to extend Michelangelo's building into a nave. Maderno's plans for both the nave and the façade were accepted. The building began on 7 May 1607, and proceeded at a great rate, with an army of 700 labourers being employed. The following year, the façade was begun, in December 1614 the final touches were added to the stucco decoration of the vault and early in 1615 the partition wall between the two sections was pulled down. All the rubble was carted away, and the nave was ready for use by Palm Sunday.

Maderno's façade, with the statues of Sts Peter (left) & Paul (right) flanking the entrance stairs

Maderno's façade

The façade designed by Maderno, is 114.69 metres (376.3 ft) wide and 45.55 metres (149.4 ft) high and is built of travertine stone, with a giant order of Corinthian columns and a central pediment rising in front of a tall attic surmounted by thirteen statues: Christ flanked by eleven of the Apostles (except Peter, whose statue is left of the stairs) and John the Baptist. The inscription below the cornice on the 1 metre (3.3 ft) tall frieze reads:

IN HONOREM PRINCIPIS APOST PAVLVS V BVRGHESIVS ROMANVS PONT MAX AN MDCXII PONT VII
(*In honour of the Prince of Apostles, Paul V Borghese, a Roman, Supreme Pontiff, in the year 1612, the seventh of his pontificate*)

The façade is often cited as the least satisfactory part of the design of St. Peter's. The reasons for this, according to James Lees-Milne, are that it was not given enough consideration by the Pope and committee because of the desire to get the building completed quickly, coupled with the fact that Maderno was hesitant to deviate from the pattern set by Michelangelo at the other end of the building. Lees-Milne describes the problems of the façade as being too broad for its height, too cramped in its details and too heavy in the attic storey. The breadth is caused by modifying the plan to have towers on either side. These towers were never executed above the line of the façade because it was discovered that the ground was not sufficiently stable to bear the weight. One effect of the façade and lengthened nave is to screen the view of the dome, so that the building, from the front, has no vertical feature, except from a distance.

The narthex

Narthex and portals

Behind the façade of St. Peter's stretches a long portico or "narthex" such as was occasionally found in Italian Romanesque churches. This is the part of Maderno's design with which he was most satisfied. Its long barrel vault is decorated with ornate stucco and gilt, and successfully illuminated by small windows between pendentives, while the ornate marble floor is beamed with light reflected in from the piazza. At each end of the narthex is a theatrical space framed by ionic columns and within each is set a statue, an equestrian figure of Charlemagne by Cornacchini (18th century) in the south end and Constantine the Great by Bernini (1670) in the north end.

Five portals, of which three are framed by huge salvaged antique columns, lead into the basilica. The central portal has a bronze door created by Antonio Averulino in 1455 for the old basilica and somewhat enlarged to fit the new space.

Maderno's nave

Maderno's nave, looking towards the chancel

To the single bay of Michelangelo's Greek Cross, Maderno added a further three bays. He made the dimensions slightly different to Michelangelo's bay, thus defining where the two architectural works meet. Maderno also tilted the axis of the nave slightly. This was not by accident, as suggested by his critics. An ancient Egyptian obelisk had been erected in the square outside, but had not been quite aligned with Michelangelo's building, so Maderno compensated, in order that it should, at least, align with the Basilica's façade.

The nave has huge paired pilasters, in keeping with Michelangelo's work. The size of the interior is so "stupendously large" that it is hard to get a sense of scale within the building. The four cherubs who flutter against the first piers of the nave, carrying between them two Holy Water basins, appear of quite normal cherubic size, until approached. Then it becomes apparent that each one is over 2 metres high and that real children cannot reach the basins unless they scramble up the marble draperies. The aisles each have two smaller chapels and a larger

rectangular chapel, the Chapel of the Sacrament and the Choir Chapel. These are lavishly decorated with marble, stucco, gilt, sculpture and mosaic. Remarkably, there are very few paintings, although some, such as Raphael's "Sistine Madonna" have been reproduced in mosaic. The most precious painting is a small icon of the Madonna, removed from the old basilica.

Maderno's last work at St. Peter's was to design a crypt-like space or "Confessio" under the dome, where the Cardinals and other privileged persons could descend in order to be nearer the burial place of the apostle. Its marble steps are remnants of the old basilica and around its balustrade are 95 bronze lamps.

Influence on church architecture

The design of St. Peter's Basilica, and in particular its dome, has greatly influenced church architecture in Western Christendom. Within Rome, the huge domed church of Sant' Andrea della Valle was designed by Giacomo della Porta before the completion of St Peter's, and subsequently worked on by Carlo Maderno. This was followed by the domes of San Carlo ai Catinari, Sant'Agnese in Agone and many others. Christopher Wren's dome at St Paul's Cathedral in London, the domes of Karlskirche in Vienna, St Nicholas Church, Prague and the Pantheon, Paris all pay homage to St Peter's. The 19th- and early 20th-century architectural revivals brought about the building of a great number of churches that imitate elements of St Peter's to a greater or lesser degree, including St. Mary of the Angels in Chicago, St. Josaphat's Basilica in Milwaukee, Immaculate Heart of Mary in Pittsburgh and Mary, Queen of the World Cathedral in Montreal, which replicates many aspects of St Peter's on a smaller scale. Post-Modernism has seen free adaptations of St Peter's in the Basilica of Our Lady of Licheń, and the Basilica of Our Lady of Peace of Yamoussoukro.

Bernini's furnishings

The apse with St. Peter's Cathedra supported by four Doctors of the Church

Pope Urban VIII and Bernini

As a young boy Gian Lorenzo Bernini (1598–1680) visited St. Peter's with the painter Annibale Carracci and stated his wish to build "a mighty throne for the apostle". His wish came true. As a young man, in 1626, he received the patronage of Pope Urban VIII and worked on the embellishment of the Basilica for 50 years. Appointed as Maderno's successor in 1629, he was to become regarded as the greatest architect and sculptor of the Baroque period. Bernini's works at St. Peter's include the baldacchino, the Chapel of the Sacrament, the plan for the niches and loggias in the piers of the dome and the chair of St. Peter.

Baldacchino and niches

Bernini's first work at St. Peter's was to design the baldacchino, a pavilion-like structure 30 metres (98 ft) tall and claimed to be the largest piece of bronze in the world, which stands beneath the dome and above the altar. Its design is based on the *ciborium*, of which there are many in the churches of Rome, serving to create a sort of holy space above and around the table on which the Sacrament is laid for the Eucharist and emphasizing the significance of this ritual. These *ciboria* are generally of white marble, with inlaid coloured stone. Bernini's concept was for something very different. He took his inspiration in part from the baldachin or canopy carried above the head of the pope in processions, and in part from eight ancient columns that had formed part of a screen in the old basilica. Their twisted barley-sugar shapehad a special significance as they were modelled on those of the Temple of Jerusalem and donated by the Emperor Constantine. Based on these columns, Bernini created four huge columns of bronze, twisted and decorated with laurel leaves and bees, which were the emblem of Pope Urban.

The altar with Bernini's baldacchino

The baldacchino is surmounted not with an architectural pediment, like most baldacchini, but with curved Baroque brackets supporting a draped canopy, like

the brocade canopies carried in processions above precious iconic images. In this case, the draped canopy is of bronze, and all the details, including the olive leaves, bees, and the portrait heads of Urban's niece in childbirth and her newborn son, are picked out in gold leaf. The baldacchino stands as a vast free-standing sculptural object, central to and framed by the largest space within the building. It is so large that the visual effect is to create a link between the enormous dome which appears to float above it, and the congregation at floor level of the basilica. It is penetrated visually from every direction, and is visually linked to the *Cathedra Petri* in the apse behind it and to the four piers containing large statues that are at each diagonal.

As part of the scheme for the central space of the church, Bernini had the huge piers, begun by Bramante and completed by Michelangelo, hollowed out into niches, and had staircases made inside them, leading to four balconies. There was much dismay from those who thought that the dome might fall, but it did not. On the balconies Bernini created showcases, framed by the eight ancient twisted columns, to display the four most precious relics of the basilica: the spear of Longinus, said to have pierced the side of Christ, the veil of Veronica, with the miraculous image of the face of Christ, a fragment of the True Cross discovered in Jerusalem by Constantine's mother, Helena, and a relic of St. Andrew, the brother of St. Peter. In each of the niches that surround the central space of the basilica was placed a huge statue of the saint associated with the relic above. Only St. Longinus is the work of Bernini. (See below)

Bernini's "Cathedra Petri" and "Gloria"

Cathedra Petri and Chapel of the Blessed Sacrament

Bernini then turned his attention to another precious relic, the so-called *Cathedra Petri* or "throne of St. Peter" a chair which was often claimed to have been used by the apostle, but appears to date from the 12th century. As the chair itself was fast deteriorating and was no longer serviceable, Pope Alexander VII

determined to enshrine it in suitable splendour as the object upon which the line of successors to Peter was based. Bernini created a large bronze throne in which it was housed, raised high on four looping supports held effortlessly by massive bronze statues of four Doctors of the Church, Saints Ambrose and Augustine representing the Latin Church and Athanasiusand John Chrysostom, the Greek Church. The four figures are dynamic with sweeping robes and expressions of adoration and ecstasy. Behind and above the Cathedra, a blaze of light comes in through a window of yellow alabaster, illuminating, at its centre, the Dove of the Holy Spirit. The elderly painter, Andrea Sacchi, had urged Bernini to make the figures large, so that they would be seen well from the central portal of the nave. The chair was enshrined in its new home with great celebration of 16 January 1666.

Bernini's final work for St. Peter's, undertaken in 1676, was the decoration of the Chapel of the Sacrament. To hold the sacramental Host, he designed a miniature version in gilt bronze of Bramante's Tempietto, the little chapel that marks the place of the death of St. Peter. On either side is an angel, one gazing in rapt adoration and the other looking towards the viewer in welcome. Bernini died in 1680 in his 82nd year.

St. Peter's Piazza

St. Peter's Basilica and the piazza at night

To the east of the basilica is the *Piazza di San Pietro*, (St. Peter's Square). The present arrangement, constructed between 1656 and 1667, is the Baroque inspiration of Bernini who inherited a location already occupied by an Egyptian obelisk which was centrally placed, (with some contrivance) to Maderno's façade. The obelisk, known as "The Witness", at 25.5 metres (84 ft) and a total height, including base and the cross on top, of 40 metres (130 ft), is the second largest standing obelisk, and the only one to remain standing since its removal from Egypt and re-erection at the Circus of Nero in 37 AD, where it is thought to have stood witness to the crucifixion of St Peter. Its removal to its present

location by order of Pope Sixtus V and engineered by Domenico Fontana on 28 September 1586, was an operation fraught with difficulties and nearly ending in disaster when the ropes holding the obelisk began to smoke from the friction. Fortunately this problem was noticed by Benedetto Bresca, a sailor of Sanremo, and for his swift intervention, his town was granted the privilege of providing the palms that are used at the basilica each Palm Sunday.

Two fountains form the axis of the piazza.

The other object in the old square with which Bernini had to contend was a large fountain designed by Maderno in 1613 and set to one side of the obelisk, making a line parallel with the façade. Bernini's plan uses this horizontal axis as a major feature of his unique, spatially dynamic and highly symbolic design. The most obvious solutions were either a rectangular piazza of vast proportions so that the obelisk stood centrally and the fountain (and a matching companion) could be included, or a trapezoid piazza which fanned out from the façade of the basilica like that in front of the Palazzo Pubblico in Siena. The problems of the square plan are that the necessary width to include the fountain would entail the demolition of numerous buildings, including some of the Vatican, and would minimise the effect of the façade. The trapezoid plan, on the other hand, would maximise the apparent width of the façade, which was already perceived as a fault of the design.

Bernini's ingenious solution was to create a piazza in two sections. That part which is nearest the basilica is trapezoid, but rather than fanning out from the façade, it narrows. This gives the effect of countering the visual perspective. It means that from the second part of the piazza, the building looks nearer than it is, the breadth of the façade is minimized and its height appears greater in proportion to its width. The second section of the piazza is a huge elliptical circus which gently slopes downwards to the obelisk at its centre. The two distinct areas are framed by a colonnade formed by doubled pairs of columns supporting an entabulature of the simple Tuscan Order.

The part of the colonnade that is around the ellipse does not entirely encircle it, but reaches out in two arcs, symbolic of the arms of "the Roman Catholic Church reaching out to welcome its communicants". The obelisk and Maderno's fountain mark the widest axis of the ellipse. Bernini balanced the scheme with another fountain in 1675. The approach to the square used to be through a jumble of old buildings, which added an element of surprise to the vista that opened up upon passing through the colonnade. Nowadays a long wide street, the Via della Conciliazione, built by Mussolini after the conclusion of the Lateran Treaties, leads from the River Tiber to the piazza and gives distant views of St. Peter's as the visitor approaches.

Bernini's transformation of the site is entirely Baroque in concept. Where Bramante and Michelangelo conceived a building that stood in "self-sufficient isolation", Bernini made the whole complex "expansively relate to its environment". Banister Fletcher says "No other city has afforded such a wide-swept approach to its cathedral church, no other architect could have conceived a design of greater nobility...(it is) the greatest of all atriums before the greatest of all churches of Christendom."

View of Rome from the Dome of St. Peter's Basilica

Tombs and relics

There are over 100 tombs within St. Peter's Basilica (extant to various extents), many located in the *Vatican grotto*, beneath the Basilica. These include 91 popes, St. Ignatius of Antioch, Holy Roman Emperor Otto II, and the composer Giovanni Pierluigi da Palestrina. Exiled Catholic British royalty James Francis Edward Stuart and his two sons, Charles Edward Stuart and Henry Benedict Stuart, Cardinal Bishop of Frascati, are buried here, having been granted asylum by Pope Clement XI. Also buried here are Maria Clementina Sobieska, wife of James Francis Edward Stuart, Queen Christina of Sweden, who abdicated her throne in order to convert to Catholicism, and Countess

Matilda of Tuscany, supporter of the Papacy during the Investiture Controversy. The most recent interment was Pope John Paul II, on 8 April 2005. Beneath, near thecrypt, is the recently discovered vaulted fourth-century "Tomb of the Julii".

Текст 6

1. Прочитайте текст.
2. Напишите аннотацию текста на русском языке.
3. Составьте реферат на английском языке.

Villa Capra "La Rotonda"

Villa Capra "La Rotonda" in Vicenza.

Villa La Rotonda is a Renaissance villa just outside Vicenza, northern Italy, designed by Andrea Palladio. The proper name is **Villa Almerico Capra**, but it is also known as *La Rotonda*, *Villa Rotonda*, *Villa Capra* and *Villa Almerico*. The name "Capra" derives from the Capra brothers, who completed the building after it was ceded to them in 1592. Along with other works by Palladio, the building is conserved as part of the World Heritage Site "City of Vicenza and the Palladian Villas of the Veneto".

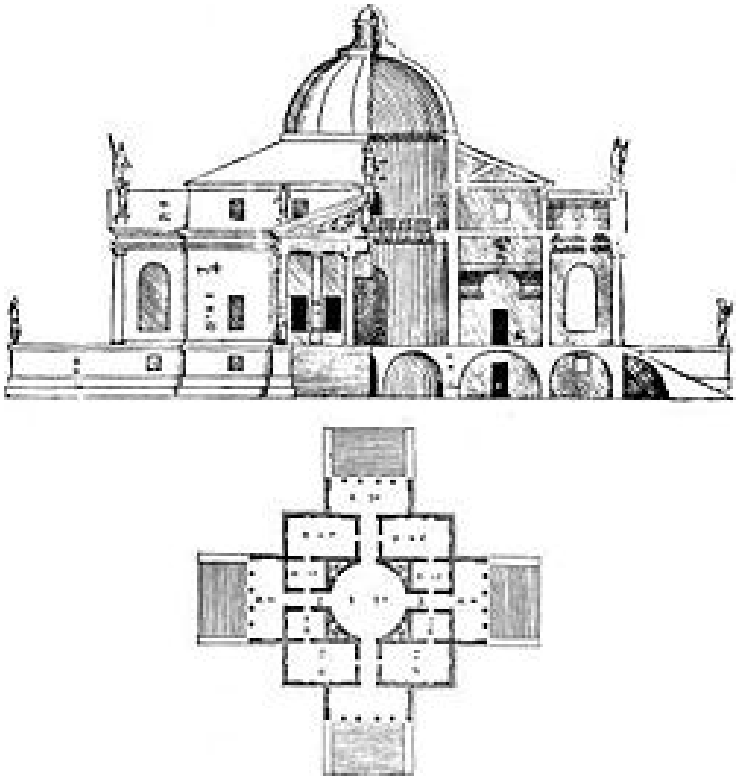
Inspiration

In 1565 a priest, Paolo Almerico, on his retirement from the Vatican (as referendario apostolico of Pope Pius IV and afterwards Pius V), decided to return to his home town of Vicenza in the Venetian countryside and build a country house. This house, later known as 'La Rotonda', was to be one of Palladio's best-known legacies to the architectural world. Villa Capra may have

inspired a thousand subsequent buildings, but the villa was itself inspired by the Pantheon in Rome.

Design

The site selected was a hilltop just outside the city of Vicenza. Unlike some other Palladian villas, the building was not designed from the start to accommodate a working farm. This sophisticated building was designed for a site which was, in modern terminology, "suburban". Palladio classed the building as a "palazzo" rather than a villa.



Palladio's plan of Villa La Rotonda, in I Quattro Libri dell' Architettura 1570.

The design is for a completely symmetrical building having a square plan with four facades, each of which has a projecting portico. The whole is contained within an imaginary circle which touches each corner of the building and centres of the porticos. The name *La Rotonda* refers to the central circular hall with its dome. To describe the villa, as a whole, as a 'rotonda' is technically incorrect, as the building is not circular but rather the intersection of a square with a cross. Each portico has steps leading up, and opens via a small cabinet or corridor to the circular domed central hall. This and all other rooms were proportioned with mathematical precision according to Palladio's own rules of architecture which he published in the *Quattro Libri dell' Architettura*.

The design reflected the humanist values of Renaissance architecture. In order for each room to have some sun, the design was rotated 45 degrees from each cardinal point of the compass. Each of the four porticos has pediments graced by statues of classical deities. The pediments were each supported by six

Ionic columns. Each portico was flanked by a single window. All principal rooms were on the second floor or *piano nobile*.

Building began in 1567. Neither Palladio nor the owner, Paolo Almerico, were to see the completion of the villa. Palladio died in 1580 and a second architect, Vincenzo Scamozzi, was employed by the new owners to oversee the completion. One of the major changes he made to the original plan was to modify the two-storey centre hall.

Interior of the rotonda

Palladio had intended it to be covered by a high semi-circular dome but Scamozzi designed a lower dome with an oculus (intended to be open to the sky) inspired by the Pantheon in Rome. The dome was ultimately completed with a cupola.

Interior

The interior design of the Villa was to be as wonderful, if not more so, than the exterior. Alessandro and Giovanni Battista Maganza and Anselmo Canera were commissioned to paint frescoes in the principal salons.

Among the four principal salons on the piano nobile are the West Salon (also called the Holy Room, because of the religious nature of its frescoes and ceiling), and the East Salon, which contains an allegorical life story of the first owner Paolo Almerico, his many admirable qualities portrayed in fresco.

The highlight of the interior is the central, circular hall, surrounded by a balcony and covered by the domed ceiling; it soars the full height of the main house up to the cupola, with walls decorated in trompe l'oeil. Abundant frescoes

create an atmosphere that is more reminiscent of a cathedral than the principal salon of a country house.

Landscape

From the porticos wonderful views of the surrounding countryside can be seen; this is no coincidence as the Villa was designed to be in perfect harmony with the landscape. This was in complete contrast to such buildings as Villa Farnese of just 16 years earlier. Thus, while the house appears to be completely symmetrical, it actually has certain deviations, designed to allow each facade to complement the surrounding landscape and topography. Hence there are variations in the facades, in the width of steps, retaining walls, etc. In this way, the symmetry of the architecture allows for the asymmetry of the landscape, and creates a seemingly symmetrical whole. The landscape is a panoramic vision of trees and meadows and woods, with the distant Vicenza on the horizon.

The northwest portico is set onto the hill as the termination of a straight carriage drive from the principal gates. This carriageway is an avenue between the service blocks, built by the Capra brothers who acquired the villa in 1591; they commissioned Vincenzo Scamozzi to complete the villa and construct the range of staff and agricultural buildings. As one approaches the villa from this angle one is deliberately made to feel one is ascending from some less worthy place to a temple on high. This same view in reverse, from the villa, highlights a classical chapel on the edge of Vicenza, thus villa and town are united.

Film

In 1979, American film director Joseph Losey filmed Wolfgang Amadeus Mozart's opera *Don Giovanni*, in Villa La Rotonda and the Veneto region of Italy. The film was nominated for several César Awards in 1980 including Best Director, and has generally been praised as one of the finer adaptations of opera to the big screen.

Current conditions

In 1994 UNESCO designated the building as part of a World Heritage Site.

The late owner of the villa was Mario di Valmarana († Oct. 13, 2010), a former professor of architecture at the University of Virginia. It was his declared ambition to preserve Villa Rotonda so that it may be appreciated by future generations. The interior is open to the public on Wednesdays and Saturdays, except during the winter months, and the grounds are open every day.

Influence abroad

The building's owner could not have foreseen that the house he commissioned from the architect Andrea Palladio would become one of the most inspirational architectural prototypes for the next five hundred years.

England

Five houses have been built in Britain based on Palladio's Villa Rotonda: Henbury Hall, Cheshire, is the most recent; Chiswick House, Greater London, and Mereworth Castle, Kent, are protected as listed buildings; Foots Cray Place, Kent, and Nuthall Temple, Nottinghamshire have been demolished.

Palestinian Territories

Owned by Palestinian millionaire Munib al-Masri and built at the top of biblical Mount Gerizim which towers over the Palestinian city of Nablus, north of Jerusalem, the "House of Palestine" carefully resembles the Villa Rotonda.

Poland

Palaces built in Poland based on Palladio's Villa Rotonda: Królikarnia Palace and Belweder in Warsaw, Skórzewski Palace in Lubostroń.

United States of America

For the competition to design the President's House in Washington, DC, Thomas Jefferson anonymously submitted a design that was a variation on the Villa Rotonda. Though James Hoban's Palladian design for what would become known as the White House was selected, the influence of the Villa Rotonda can also been seen at Jefferson's own iconic home of Monticello.

БИБЛИОГРАФИЧЕСКИЙ СПИСОК

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