

## NOTES FOR TEACHERS

### **Le Corbusier – Art and Architecture - Liverpool**

#### **EDUCATION PROGRAMME**

These notes are written to assist teachers in getting to know the work of Le Corbusier and so to feel more confident about incorporating aspects of architecture and the work of this architect in particular in planning the project work at KS1, KS2 and KS3.

The aim in planning the programme of visits and project work for schools in Liverpool has been to utilise the exhibition in engaging young people with architecture and the built environment.

This process will begin when the young people involved start to visualise and interpret some of the ideas that Le Corbusier put forward in his drawings, paintings and buildings in their own project work. In this way they can experience for themselves some part of the creative energy that makes an architect like Le Corbusier so important in our understanding the built environment in which we live.

The process of visualisation and interpretation is best defined by Freeman Tilden in his book *Interpreting Our Heritage* –

*“ an educational activity which aims to reveal meanings and relationships through the use of original objects, by first hand experience and by illustrative media rather than to communicate actual information. . . . the chief aim of interpretation is not instruction but provocation. . . . information as such is not interpretation, interpretation is revelation based on information.”*

Visiting an exhibitions like this helps young people to understand what design means in their own lives and that of others. Eulalia Bosch, the education officer at the Museum of Modern Art in Barcelona, explains the contribution such an exhibition can make to young people’s learning in her book *The Pleasure of Beholding*.

*Learning to look means beginning to assemble one’s own archive of concepts and images out of this inherited set. It means finding a solid footing, a base from which we venture down new paths of dialogue and find new spaces for contemplation. It means recognising the past in order to invent the present, which will come to be tradition in our own future.*

We have divided Le Corbusier's life into three sections. Each of these three sections is illustrated with a selection of buildings that he designed in that period of his life. In each section we have included a house he designed to give a comparative domestic theme to the notes.

## Section One - **The Formative Years - 1887-1922.**

As a teenager in rural Switzerland he embarked on an apprenticeship in the traditional craft of watch engraving. This apprenticeship brought him under the influence of the Arts and Crafts Movement and that influence continued when he transferred his training to the design and construction of buildings. This change was due to his poor eyesight and advice from his tutors that he would be better suited to architecture. In later life he wrote that at that time he wanted to become an artist but there was pressure on him to enter a profession.

There was no formal course in architecture available to him and so his tutor felt that he should 'learn by doing' and arranged for Le Corbusier to design a number of houses for wealthy local people. A local architect supervised the design process and construction of these houses with Le Corbusier being involved at every stage and being paid for the work he did.

As a student of architecture he began to travel in Europe and to study first hand a range of Classical, Medieval and Islamic buildings. He made these architectural pilgrimages throughout his life and recorded the buildings he had seen in his sketchbooks. From the outset he was interested in analysing the structural and spatial qualities of these buildings through drawing them. He was particularly interested in recording the way in which he felt the builders had captured 'the spirit of their age' in these buildings.

(PHOTO)

**Maison Fallet** – Built in 1906 it was designed as a family home. It was built on a steep hillside on the outskirts of La Chaux-de-Fonds and the shape of the roofs responded to the shape of the hills around. The detail and ornament of the house was based on geometric patterns and the simplification of natural forms - seeds, leaves and the branches of trees. His approach in designing this house is that of the Arts and Crafts Movement.

(PHOTO)

**Villa Schwob** – Built in 1916 it was designed as a home for a wealthy watch making family and they asked that the design should express their social standing in the local community. The site is close to a number of grand residences in a suburb of La Chaux-de-Fonds that had been planned in a very formal way. In designing this house Le Corbusier was exploring the visual relationship of simple undecorated geometric shapes and three-dimensional

forms. The expression of nature that was so much a part of the previous house has gone and any decoration is reduced to lines that define the forms of the building and link the separate parts together in a proportional composition of geometric shapes.

At the time that he designed this building he had travelled in Europe and become aware of other issues in architecture than the philosophy of the Arts and Crafts Movement. He began to focus on the interior of the building rather than the exterior decoration and detail. He envisaged the ways in which the occupants would experience the internal spaces that he linked together as a spatial composition. In later life he stated that this was the first design of a building in which he was thinking like an architect.

## Section Two - **A Rationalist Approach -1922-1944.**

He started to find his life in the Swiss countryside to be too provincial and so he moved to Paris where he lived for the rest of his life. He chose to live a bohemian lifestyle and so came into contact with a number of influential modern architects, painters and writers.

Because he realised that his formal education had been so inadequate he started to attend courses in a whole range of subjects including mathematics, science and engineering. From the things that he wrote at that time we can see that he was very aware of the need to acquire knowledge if he was to be as influential in society as he dreamt of being. As with many creative people of his generation he felt that he had a prophetic and visionary role to play in re-ordering a society that they saw as being in terminal decline due to its industrialisation, commercialism and lack of social vision.

Through his links with avant-garde individuals he was attracted to the work of architects who had broken with the Art Nouveau style in design. The aim of these architects was to establish what they saw as a universal approach to design that was based on function, structural form and spatial composition. These new buildings were not be camouflaged with ornate decoration

As he studied these ideas he began to take them much further and link them to the concept of buildings as machines designed to support the lives of their occupants. He was fascinated by the functional form of 'machines' of every type and scale from simple kitchen utensils to motorcars, aeroplanes and ships. This interest extended to buildings like power stations and turbine halls that he visualised as the cathedrals of 'the machine age' in which he and his contemporaries believed they were living.

When he set up his own studio in Paris he started to publicise his ideas on how he thought the architecture of 'the machine age' should be designed. He did this

through writing and publishing books illustrated with his drawings and evocative photographs

The public perception of such buildings was that they were ugly and the public preference was for tradition and the status quo. On the other hand the perception of the fashionable elite was that such buildings were a 'novelty' and so he was commissioned to design a number of houses for wealthy clients who wanted to be in fashion. It was these houses that established him on the world stage.

After a time he felt his architecture was becoming too much of 'a fashion icon' and he turned away from designing private houses to designing buildings to meet the day to day needs of urban society. At that time he was also working with political groups who advocated a re-structuring of society and emphasised the improvement of urban living. This alignment with political movements was based on his belief that the new rational approach to architecture and town planning would change society for the better and improve the lives of people.

It was at this time that he developed The Modulor - a system of mathematical proportion that he later used to relate the parts of his buildings one to another; this system related the structure, space and detail of his buildings to the scale and proportion of the human body. He felt that this underlying order would bring a sense of unity to the environment in which people lived: there would be a visual harmony and so the quality of life would be improved.

(PHOTO)

**Villa Savoye** – This private house was built in 1928 in a walled garden on the outskirts of Paris. The design illustrates how far Le Corbusier had moved on from his earlier Arts and Craft approach. The rational plan and structure of this building combined with the composition of interlinked spaces and geometric shapes make it clear that it is a 'man made' design statement in contrast with nature. This was the design approach that Le Corbusier was taking at that time because he now felt it was dishonest to try and merge buildings with natural forms. The visual contrast is given even greater impact by the building being painted white and raised off the ground on slender columns.

(PHOTO)

**Cite de Refuge** – This building was designed in 1929 as a Salvation Army refuge for the homeless of Paris. It was the first time that such a hostel had been designed as a new building rather than converting an existing building. Le Corbusier worked with his client to write the design brief for the building and he took the opportunity to create a building full of sunlight and fresh air – what he called 'a factory of goodness'. In designing this building he was also testing out many of his ideas for urban buildings in the new cities that he envisaged building.

The design of this building was based on his belief in the role of architecture to improve the quality of life of the people who lived in them

### Section Three - **Ancient Associations -1945-1965**

Le Corbusier had been deeply affected by the destruction of the First World War and during these years had turned more to abstract painting and sculpture as a way of exploring his creative ideas. During the Second World War the urban destruction was much greater and he felt that, when the war was over, his ideas would be in demand as the basis on which the cities of Europe would be rebuilt.

As he was committed to the idea that the quality of peoples lives should be improved by design it was hard for him to subscribe to a post war society in which so much was led by market forces. Many of his ideas on architecture and town planning were devalued by politicians, bureaucrats and a building industry that did not share his vision.

His response to this rejection was a positive and creative one in that he returned to his life long exploration of the elemental qualities that he saw as being at 'the core' of architecture and building.

In this way he felt that he could improve the quality of life for people by designing buildings in which they could experience 'a spiritual depth' that he felt was so important to the well being of society.

His early sketchbooks illustrate how for him architecture had always been about such fundamental qualities as location, orientation, materials, structure and sunlight. In his earlier buildings he had chosen to express the resolution of these ancient qualities in different ways but now he chose to go back to study their most fundamental form which he found in the vernacular buildings of the Mediterranean countryside.

In going back to the basics of architecture he did not feel that he was discarding the rational design approach of his earlier buildings but only exploring its roots. He was not escaping into art for art's sake as some of his critics said at the time. The primitivism of the buildings he began to design at this time came from the ethical stance he had taken all his life and a return to a youthful obsession with architecture and nature being in harmony.

For Le Corbusier the process of designing a building was one in which he incubated his ideas for long periods of time; a process in which he moved backwards and forwards between general ideas, specific observation and 'analogies' between natural form and man made objects. In order to keep this process in motion he fed his imagination through daily sessions of abstract painting in a studio where he was surrounded by objects, both man made and natural, that interested him in their form and juxtaposition.

He describes his way of designing in the following words:

*“ When a job is handed to me I tuck it away in my memory, not allowing myself to make any sketches for months on end. That’s the way the human head is made; it has a certain independence. It is a box into which you can toss the elements of a problem any way, and then leave it to ‘float’, to ‘simmer’, to ‘ferment’. Then one fine day there comes a spontaneous movement from within, a catch is sprung; you take a pencil, a charcoal, some coloured crayons . . . . an you give birth on the sheet of paper. The idea comes out. . . . it is born.”*

In the design of his later buildings Le Corbusier was an artist architect totally immersed in the process of creation and the result is a building in which ‘the whole is more than the sum of its parts.’ From the things he wrote about his work at this later stage in his life he was aware of this extra ‘spiritual’ dimension to his buildings that it is hard to describe in words and has to be experienced to be understood.

Although his earlier buildings were very rational in design Le Corbusier was never a materialist because his buildings always express the poetry of his ideas and the creative contribution of those who occupy them. Throughout his life he believed that ‘the order’ he had observed in nature and which he tried to bring to his architecture was evidence of a spiritual dimension to life that he wanted his buildings to contain.

He had always been interested in how people experienced his buildings through their senses and this knowledge had allowed him ‘to play’ with the intensity of this experience in much the same way as a musician plays with our emotions through sound. The acoustic qualities of his buildings were important to Le Corbusier but for him it was the extended range of light and shadow that had the most impact in the interior spaces of his buildings and contributed to the spiritual quality he wanted them to have.

He became interested in ‘the layers of memory’ that the sites of his buildings contained for those who new them and this reinforced the way in which the relationship of the building to its location dominated his imagination.

He was interested to develop the visual potential that he sensed between the interior and exterior spaces of buildings and the relationship of the interior of the building to the horizon. He designed the openings in the walls of his buildings to emphasise this inside/outside relationship and such openings were never just doors and windows but devices by which he could locate his building in its context.

(PHOTO)

**Chapel – Ronchamp** - This church was built in 1953 on a hilltop in open country near Lyon in France. Le Corbusier was invited to design the building as part of a movement in the Catholic Church to use art and architecture to explore the roots of religion. The feeling was that the traditional forms of church architecture had lost their meaning for people and that the Church had to turn to the most vigorous creators of modern art and architecture to set this right.

In this building Le Corbusier responds to the sacredness of the site both for the individual at prayer within the building and to the crowds of pilgrims who gather on the hillside outside. The sculptural form of the building is dominated by the roof structure that the architect based on an inverted crabs shell that he had found on a beach and kept in his studio. He kept such natural objects to stimulate his imagination and promote design ideas. The unique shape of the building responds to the acoustic needs of the interior and exterior and to the relationship of the building to its location.

(PHOTO)

### **Unite d’Habitation**

Built between 1946 and 1952 this was the first commission granted to Le Corbusier for social housing and was an opportunity to incorporate many of the ideas he had been developing. It aimed to provide accommodation for individual families in a building that promoted a sense of community. The families that were housed in this complex building had lost their homes in the recent war and so there was a great sense of this project being a ‘flagship’ for reconstruction. The building is constructed from in situ reinforced concrete and contains 337 apartments and communal spaces including a nursery school, shops, hotel and roof top terrace. It was in this building that Le Corbusier tested out the proportional system of measurements that he called “The Modulor”. This system was developed in order “to unify” the design of the building by relating the different parts of the building one to another and to the scale of the human body. As an example of mass housing this building was very influential and four similar Unite d’Habitation were built in France and Germany.

## **THE MAN AND HIS BUILDINGS.**

Questions for exploration and discussion:

- 1 Who was Le Corbusier?
- 2 How did he get the name Le Corbusier?
- 3 What was he like as a person?
- 4 How did he become an architect?
- 5 What is the difference between architecture and building?
- 6 How can his words help us understand architecture?

- 7 Why did he become so famous?
- 8 Who were the people who influenced him?
- 9 Why was designing furniture so important to him?
- 10 What would it have been like in a city he had designed?
- 11 Why was painting and drawing so important to him?
- 12 What were his buildings built of and why?
- 13 How did he want people to understand his buildings?
- 14 Why was he interested in cars, ships and aeroplanes?
- 15 Are his ideas as important as his buildings?

Question One: **Who was Le Corbusier?**

He was born in October 1887 in La Chaux-de-Fonds a provincial town on the border between France and Switzerland and he was christened Charles Edouard Jeanneret.

Due to longstanding political turmoil this area of Switzerland lacked a national identity and there were cultural disputes between the Catholic and Protestant traditions. Both these factors were to affect his sense of self-identity in later life and in his efforts to establish the cultural tradition of which he felt he was a part.

His was an established middle class family in which his father promoted the practical aspects of his son's life in apprenticing him as a watch engraver. His mother was more aspiring and as a talented musician she guided him into a more abstract and intellectual creative life. He described his childhood as

*“a matter of occupying a particular square on the chessboard: a family of musicians – music heard all through my youth - a passion for drawing and a passion for the plastic arts – a character that wanted to get to the heart of things.*

Question Two: **How did he get the name Le Corbusier?**

Having been born in a region that lacked identity he felt the need to establish his roots in one country or another and to belong to one cultural tradition. It was when he moved to Paris that he finally decided to take on French nationality. This brought with it the rationalism of his French roots alongside the non-conformist intellectual approach rooted in the Protestant culture of his childhood. At the age of thirty one and based permanently in Paris he chose to take his French mothers maiden name of Lecorbesier which evolved later into 'the title' Le

Corbusier. Due to his gaunt appearance and the heavy dark glasses that he wore he was nicknamed Corbu – The Crow.

Question Three: **What was Le Corbusier like as a person?**

French architect Andre Wogenscky worked with Le Corbusier as his assistant for twenty years. He knew him as friend and collaborator and describes him in this way:

*'Le Corbusier did not disguise himself. His strength came from having got rid of rules., established ways of doing or seeing, and routines. It is perhaps the strength of the self-taught. No school where one gets into bad habits. No " We do it like this." His school was the spectacle of life. It was free from all the rules, habits and models that that school and society put into our eyes. He was untouched by those conditioned reflexes that enslave so many architects. He started from zero in life and found in himself great cosmic, earthly and human forces, energy fields that affected the body and the mind. . . . His immense general knowledge was not bookish. It had been acquired from lived experience. It came from his drawings, from his travels, from what he had seen and experienced. It was manual rather than intellectual.'*

People who knew Le Corbusier comment on how ordered his personal life was and how hard he worked. He recognised that this was due to his mothers influence. She was a devout Protestant with a strong work ethic who saw her life as a moral mission of service to others and she impressed this onto her son from an early age.

Another influence in his childhood was his maternal aunt who told him stories of how his ancestors had lived on the coast of the Mediterranean Sea and had been persecuted for their religion and driven north into the mountains. As he grew up this Mediterranean ancestry became very important to him and in later life it formed the basis for many of his creative aspirations because he felt that it was here that art and architecture began.

As a young man he spent a lot of time travelling in the countries around the Mediterranean and in late middle age he lived there for periods of time in a studio home he built at Cap Martin where he died swimming in 1965 and was later buried.

For much of his life he felt that he did not gain the recognition he deserved and during his lifetime was seen as an outsider by the political and architectural establishment. This feeling of social and professional insecurity must have been compounded by the fact that his ideas were not tested as buildings until quite late in life. Although during his period of informal training he had designed and supervised the building of three houses he was forty-three before he had a

portfolio of built designs that were publicly recognised as being the work of an outstanding architect and for many the work of a genius.

Even though his genius was being recognised worldwide during the 1920's his ideas and his buildings continued to be 'officially' unacceptable in France and detested by the general public who saw them both as ugly and the work of a revolutionary.

Le Corbusier's response to such rejection was:

*"The defeats of these past years represent so many victories. Our rejected plans will become public accusers, for the public will judge the bureaucrats according to these plans; and the day will come when these plans will force a change."*

His words proved to be true because the official rejection publicised his ideas to a much wider audience of young artists and architects. They became his advocates worldwide and absorbed his design ideas into the designs of their own buildings.

Question Four:      **How did he become an architect?**

Le Corbusier had a short period of formal design training as a watch engraver. The course was based on the theories and practice of the English Arts and Crafts Movement and the students were encouraged to develop an understanding and empathy with nature through the analysis and drawing of the structure and form of plants and other natural forms. They were also introduced to the idea that designs that were in harmony with nature would improve the moral fabric of the society they were designed for. In later life Le Corbusier re worked this concept in his design philosophy.

Due to his bad eyesight his parents were advised that he should leave the watch engraving course and study to become an architect. As there was no local architectural training available it was decided that he should 'learn architecture by doing' through the design and construction of houses for local clients. His tutor arranged such commissions with wealthy local families but, as he was only eighteen and inexperienced, there was a need for professional guidance. His tutor arranged for a local architect, who designed in the Arts and Crafts style, to teach him about construction and the contractual obligations of architectural practice.

In 1907, at the age of twenty and with the money he had earned from his training projects, he set off to Italy on the first of many exploratory trips around Europe and the Middle East. Throughout his life he saw travel as an essential part of his education because it brought him face to face with historic buildings and the townscape and landscape in which they were located. He recorded his

impressions through writing but it was drawing in his sketchbook that he felt was the most effective way of recording the things that interested him. It is these sketchbooks that record his growing understanding of the elements of architecture – for example – plans and sections of buildings, methods of construction, proportions of interior spaces and the relationship of buildings to their location.

It is important to understand that he was not an architect in the professional sense that we know today. In order to enter the present day profession architects have to go through a long period of formal training in a range of subjects and are then examined to establish if they have reached the required standard. It is apparent as one gets to know his life and work that even if it had been available to him this route would not have been suitable because it would have limited his free ranging creativity.

He knew from an early age that his role was to be that of an artist architect rather than acquiring the status of architecture as a profession. All his life he chose to follow a more individual path in which he absorbed knowledge and experience that was tested not in an examination room but in his own creative output of writing, drawing, painting, sculpture and building.

This is how he described his choice:

*As for me I do not contribute to the idea that you have to have a position in life by the age of 25. . . .I feel drawn to a much less tied-down idea of life . . . . more like a symphony than the ticking of a clock.*

Question Five:        **What did he see as the difference between architecture and building?**

This question was of great interest to Le Corbusier and one that he returned to many times. He explains the difference this way:

*You employ stone, wood and concrete and with these materials you build houses and palaces: that is construction. Ingenuity is at work.*

*But suddenly you touch my heart. You do me good, I am happy and I say: 'This is beautiful.' That is architecture. Art enters in. . . . .*

*These shapes are such that they are clearly related in light. The relationships between them have not necessarily any reference to what is practical or descriptive. They are a mathematical creation of your mind. They are the language of architecture. By the use of inert material and starting from conditions*

*more or less utilitarian, you have established certain relationships that have aroused my emotions. That is architecture.*

The starting point for many of his design ideas was his interest in what we now call “vernacular architecture” a term used to describe the methods of construction and structures that evolve to meet local needs in different places around the world. This approach to building is often part of local tradition and is based on practical knowledge gained from trial and error rather than a theoretical design approach. Such vernacular buildings are often dismissed as being crude and lacking refinement but Le Corbusier saw ‘the art’ in these buildings and came to understand how they reflect the fundamental qualities that have evolved over time in response to local culture and environment.

Question Six:       **How can his words help us to understand architecture?**

One of the most important statements that Le Corbusier made in terms of our understanding of his architecture is this:

*Architecture has nothing to do with the various styles.*

For him a building had to be understood through the senses not through the recognition of stylistic details. A building had to be experienced from within and not just to be observed from outside as an object of fashion.

This is a view explained by Eiler Rasmussen a contemporary of Le Corbusier in his book *Experiencing Architecture*.

*Understanding architecture is not the same as being able to determine the style of a building by certain external features. It is not enough to see architecture; you must experience it. You must observe how it was designed for a special purpose and how it was attuned to the entire concept and rhythm of a specific era including your own. You must dwell in the spaces, feel how they close about you, and observe how you are naturally led from one space to the next. You must be aware of the textural effects, be aware of the range of colours and tones, and understand how the shape, colour and texture are affected by the direction and quality of the light. You must experience the way in which the acoustic qualities of a space affect your concept and understanding.*

Question Seven:    **Why did Le Corbusier become so famous?**

From an early age he was an accomplished self-publicist. He did not wait for others to recognise the creative potential of his ideas or the designs he based on them. As he developed his revolutionary ideas on design he wrote and illustrated books to promote them to a wider audience. As he designed and constructed his

unique buildings, he collected them together in books that he published and circulated to a worldwide audience. He would often send a copy of such a book to a potential client, newspaper editor or politician in an effort to keep his name in front of those who made the decisions or had access to a new audience for his ideas.

Today such publicity has become common and is the product of the media industry but in the early 20C it was still rare. The institutions that were set up to regulate the professional status of architects prevented them from advertising in this way. Le Corbusier did not agree with any such professional limitation on his self-promotion but he did ensure that the promotional material he produced reflected the integrity of his buildings in its drawings, photographs, typography and overall graphic quality.

He did not set out to make a name for himself by being different and novel. He set out to publicise his philosophy on architecture and planning because he felt they were important to the future of architecture and urban life; he intended to be seen as evolutionary not revolutionary and for his work to be recognised as being part of an historic continuum.

This is what he wanted his architecture to do

*“ Today I m accused of being a revolutionary. Yet I confess to having only one master – the past: and only one discipline – the study of the past”.*

*“To be modern is not a fashion, it is a state. It is necessary to understand history and he who understands history knows how to find the continuity between that which was, that which is and that which will be”.*

Question Eight:      **Who were the people who influenced him?**

Through the master/apprentice relationship that he established with the people he chose to work for he was introduced to a whole range of ideas that form the culture of architecture. He came to understand that for such people architecture was not primarily a product of fashion but was based on a design philosophy that they evolved over a lifetime.

Among such people were his tutor **Charles L'Eplattenier** who was an advocate of the Arts and Craft Movement and as such believed that the most vital aesthetic principle he could pass on to his students was in their understanding of nature, not in the superficial imitation of plant forms, but in its underlying structure and order. He also introduced his students to the concept of 'place' and the idea that

buildings should reflect their location through their form and the materials they are made from.

In 1908 Le Corbusier visited Vienna and worked in the design studio of **Joseph Hoffman** who practiced what he called 'total' design believing that when an architect was commissioned to design a building he should also design its contents including furniture, light fittings, etc. This was an approach that Le Corbusier was to apply to his own work in the future.

During his first visit to Paris he became an assistant to **Augusta Perret** who was an established designer of buildings in which concrete reinforced with steel was both the primary structural and visual material. In these buildings the concrete columns and beams were not covered up with stone to give the building a traditional appearance but left exposed as a material of equal visual value as stone or brick.

The slender concrete columns and beams of the buildings Perret designed allowed for the internal and external walls to be non load bearing and so provide for the 'open' planning of each floor and for the external elevations to be made from large areas of glass. This design approach changed the appearance of buildings from the large enclosed volumes of stone and brick that they had been to light open structures. Le Corbusier saw the design potential of this change and made it his starting point in the design process of his later buildings.

In 1910 Le Corbusier went to Berlin to work in the design studio of **Peter Behrens** at the time that he was consultant designer for the engineering company AEG. Behrens had first trained as a painter before establishing himself as a product designer and architect. Like Joseph Hoffman he believed in a 'total' design approach in which, as an architect, he should design not only the factory but also the products that the factory produced. This was the first time such an holistic design approach had been advocated for industry

A major influence on Le Corbusier, when he became established as an architect, were the young designers who came from all over the world to work with him, often as unpaid volunteers. This must have been a process of creative co-learning for both Le Corbusier and his young assistants as he recognised in them the relationship that he had experienced in his own apprenticeship to a number of master architects.

Question Nine: **Why was designing furniture so important to him?**

Le Corbusier designed furniture in collaboration with Charlotte Perriand who was already established in the furniture industry in France. Together they designed furniture that is still seen as revolutionary today and continues to inspire present day designers.

Le Corbusier did not promote the use of free-standing furniture in his buildings, except for chairs and tables, because he believed that things like cupboards, bookshelves and kitchen equipment should be built in to the free standing walls that divided up the spaces in his buildings. In this way the spaces were left free of visual clutter which he associated with the architecture of the past and he also believed that such built in furniture was labour saving in the day to day running of a home.

Architects are interested in designing furniture because it gives them the opportunity to design at the micro level as opposed to the macro level of a building.

The design of small scale details like furniture and door handles were important to him because he wanted to control the way in which people 'engaged' with his buildings – the parts of the buildings that they saw every day and touched many times with their hands. Such concern for the visual and tactile quality of design was based on his belief that such a sensory relationship with a building made people feel more 'at home' and so more secure; there was a sense of belonging.

Question Ten:        **What would it have been like to live in a city designed by Le Corbusier?**

Le Corbusier and his contemporaries were very aware of the social unrest that existed due to the living conditions many people had to endure in cities in the early 20<sup>th</sup> century. They believed that the visionary architecture and town planning they proposed could help to calm this unrest by giving people a better urban environment and so a better quality of life.

In his design for *A Contemporary City for Three Million People* and the later design for *The Radiant City* he describes how the city will be zoned into areas for work, housing, recreation and transport. He describes the office buildings in the city centre as 'the brain of the city' surrounded by the high blocks of flats which each had their own gymnasium, nursery school, running track and swimming pool on the roof. He describes how the density of the flats in high towers will allow them to be surrounded by parks, sports centres and playgrounds. The traffic will be on elevated roadways in order to eliminate what he saw as the chaos and pollution of the traditional streets.

He excludes any hierarchy of house types based on different social classes. In the city he visualised everyone would live together in blocks of flats he calls, *the unites*, and there would be no need to spend time striving for a bigger and better house that had to be different to its neighbours. He believed that if all living accommodation had the same high standard of facilities then the residents would not be striving for better accommodation but spend more time enjoying family life and fulfilling their human potential.

Although, from our present day standpoint, we can judge such proposals as being very naïve we also have to accept that there was great integrity in his philosophy of how he felt people should live in cities.

Question Eleven: **Why was drawing and painting so important to him?**

Throughout his life Le Corbusier used freehand drawing as a way of recording the things that interested him. Through the process of drawing he was analysing what he saw and at the same time developing the drawings into visual explorations of the subject of the drawing. The process of drawing would often produce ideas that would stimulate his imagination and, in some cases, provide a starting point for a new design solution.

He described the process of drawing in his book *Creation is a Patient Search*:

*“ When one travels and works with visual things – architecture, painting or sculpture – one uses one’s eyes and draws, so as to fix deep down in one’s experience what is seen. Once the impression has been recorded by the pencil, it stays for good, entered, registered, inscribed. The camera is a tool for idlers, who use a machine to do their seeing for them. To draw oneself, to trace the lines, handle the volumes, organise the surfaces. . . . all this means first to look, and then to observe and finally perhaps to discover . . . . and it is then that inspiration may come. Inventing, creating, one’s whole being is drawn into action, and it is this action which counts. Others stand indifferent – but you saw!”*

In his abstract paintings we see the same process of analysis and understanding and they combine both the rational and poetic approach to design that we also see in his architecture. The process of painting was very important to him because he saw it as a visual exploration and a way of developing ideas that would inform his architecture.

The way that he draws, paints and sculpts reflect the two very different sides to his creative personality and the tension between the two was a driving force in his creativity.

Question Twelve: **What are his buildings built of and why?**

Le Corbusier is best known for his use of reinforced concrete but he used a whole range of other materials including stone, wood, brick, glass and steel. His choice of a particular material was based on the function it had to perform but he also based his choice of material and its method of fabrication on the aesthetic image he wanted the building to put across

He placed building materials in two categories – artificial and natural.

In the buildings he visualised as ‘machines for living’, that stood out in contrast with their site, he used mostly artificial or man-made materials. In his later buildings, which were more organic and intuitive, he used more natural materials.

During the period that he was designing ‘buildings as machines’ he was carrying out research into the factory production of buildings, the prefabrication of their parts and the standardisation of components like doors and windows. In his efforts at that time to move the building industry forward from a handcraft tradition into industrial mass production he modelled his ideas for production on the aeroplane and automobile industries.

At that time he was also using concrete but he saw it as an artificial material because it could be produced as units cast in moulds under factory conditions

In the later phase of his work, when his buildings became more sculptural, he changed his view of concrete and placed it in the category of a natural material alongside brick, stone and timber. The concrete in this category was cast in a mould on site and its finished surface would express the surface of the mould. For him this was now a material that was a product of workmanship and not the product of a machine or factory

He has been criticised because a number of the buildings, in part or in whole, have not stood up to the process of aging and the effects of the weather. This is because in many ways his designs were ahead of their time but the materials and methods of construction he had at his disposal were still rooted in tradition.

The architects who followed Le Corbusier have designed and built buildings based on his ideas but they have benefited from the development of modern materials and technology. It is the buildings they have designed that have stimulated the construction industry to develop new ways of building.

**Question Thirteen: How did he want people to understand his buildings?**

Le Corbusier wanted people to understand his architecture through their senses as they walked through the interior and exterior spaces.

He explains his design process:

*“ I draw a character. I make him enter the house; he discovers its volume, the form of the room and above all, the amount of light coming through the window or the pane of glass. He advances: another volume another influx of light; still further on, a flood of light and shade on the side. . . . .”*

In the design of many of his buildings he explored his ideas through a sequence of sketches – a process that has become known as ‘serial vision’ – these drawings represented the continuous experience of the spaces as the occupant/visitor passed through them.

This emphasis on the spatial experience of his buildings was made possible by planning them around ramps rather than staircases. His feeling was that as people moved up and down a staircase their spatial experience was disjointed and fragmented. By walking up or down a ramp the experience of such spaces would be a seamless visual transition through the building, moving from one level to the next in the same way as one can imagine walking through the multi faceted spaces and objects depicted in a Cubist painting. In designing spaces in this way he had found the architectural equivalent of the changes that had taken place in painting; the experience and understanding of the building would be made up of a multiplicity of viewpoints.

He explains his intention in this description of the interior of the Villa Savoye:

*“In this house, there is a true architectural promenade, offering constantly changing, unexpected and sometimes surprising views. It is interesting to achieve such diversity when there is, for example, from a constructional point of view an utterly strict pattern of pillars and beams.*

*So far, visitors have looked around the interior again and again, asking what is going on, finding it very hard to understand the reasons for what they see and feel; they cannot find anything of what they would call a “house”. They feel as if they are in something completely new.”*

#### Question Fourteen: **Why was he so interested in cars, ships and aeroplanes?**

In the early 20C there was great interest amongst painters and architects in the machines that were being developed for an expanding transport system. It is hard for us to imagine the excitement that they must have felt as such machines became increasingly common in every day urban life and yet the built environment itself had not changed for centuries. The outcome of this excitement was that they began to imagine an urban environment that they felt did justice to ‘the machine age’ in which they were living.

It was engineers who were already designing the structures and buildings for industry and transport and so it was natural that architects like Le Corbusier turned to engineering for inspiration. They found it on a macro scale in buildings like long-span bridges, airship hangers and grain silos and on a micro scale in the parts of machines like carburettors, kitchen utensils and medical instruments

They saw the design process of the engineer to be in sharp contrast to that of the traditional architect. The engineer's approach was rational and part of an evolving functional tradition. For the engineer it was the application of rational thinking and calculation whereas the traditional architect still designed buildings based on aesthetic 'good taste' and in the particular 'style' that was then in fashion.

The materials that engineers were working with were also new and exciting. The properties of these new materials allowed them to be used in new ways and on a scale that was visually dramatic. The material that appealed most to Le Corbusier was 'ferro-concrete' which, as its name implies, was concrete to take the compressive stress and reinforced with steel to resist the tensile strain.

Although Le Corbusier stressed the need for rational thought and functional objectives to be the basis of his architecture he did not lose sight of the parallel need for artistry and poetry in his buildings. For him this is what would always set the architect apart from the engineer

*"Architecture is the masterly, correct and magnificent play of masses brought together in light. Our eyes are made to see form in light: cubes, cones, spheres, cylinders and pyramids are the primary forms. . . . the engineer, inspired by the laws of economy and governed by mathematical calculations puts us in mind with universal laws. Architecture goes beyond utilitarian needs. . . . passion can create drama out of inert stone.*

Question Fifteen:                    **Why should we explore his ideas as well as his buildings?**

In their process of understanding architecture it is important for young people to explore the process of thought and evaluation of ideas that is the basis of design. Le Corbusier believed that with every building he designed he was moving forward his design philosophy and contributing to the culture of the age in which he was living.

In 1923 he published a book entitled *Vers une Architecture* (Toward an Architecture) that was to be his manifesto and became one of the most influential books on architecture and town planning in the 20<sup>th</sup> century. In writing it he was presenting himself as architect, town planner, discoverer of ideas, historian, critic and prophet.

In the present day it is hard to conceive an individual assuming such a role but at that time it was not uncommon among writers, artists and architects. The role of prophet was one he took very seriously because he felt that society had to change if it was to survive and he referred to the books he wrote as 'machines for persuading.' In *Toward an Architecture* and his other books he was asking

society in general to “open one’s eyes,” and see the changes that were taking place and their potential to create a new built environment.

He wrote in the Introduction to *Vers une Architecture* that his book “*was not only for the professionals but was made instead for the general public*” and that was the audience he wanted to communicate with both through his words and his buildings.

Since its publication *Toward an Architecture* has never been out of print in most of the languages of the world and the ideas that it contains have had as greater impact as the mould breaking buildings that its author created.

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### **Book List:**

These are books recommended to teachers wishing to research the life and work of Le Corbusier in more detail:

Le Corbusier – The Art of Architecture -Von Vegesack, Von Moos, Ruegg Kries

Le Corbusier - Jean-Louis Cohen

Towards An Architecture – Le Corbusier

Form and Function – Tim + Charlotte Benton and Dennis Sharp

Nature and Space – Sarah Menin and Flora Samuel

Le Corbusier – Ideas and Forms – William Curtis

Le Corbusier – Architecture and Form – Peter Blake

Ideal Cities – Ruth Eaton

Le Corbusier in Detail – Flora Samuel

Le Corbusier’s Hands – Andre Wogenscky

Journey To The East – Le Corbusier

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Notes compiled by John Bishop and Catherine Clements.

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