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Medicine and architecture: a reciprocal relationship

Introduction

Medicine and architecture are two disciplines that at first glance appear to be fundamentally different from one another. Medicine is concerned with the preservation and restoration of human health, while architecture is concerned with the design and construction of buildings and spaces. However, a closer look reveals that there is a close and reciprocal relationship between these two fields.

The influence of architecture on medicine

Architecture can influence people's health and well-being in many different ways. For example:

- Light and air: natural light and fresh air are essential for human health. Buildings that take these factors into account promote the recovery and well-being of patients.
- Noise and stress: Noise and stress can have a negative impact on health. Hospitals and other medical facilities should therefore be designed to minimize noise and stress.
- Room design: The design of rooms can influence people's mood and well-being. Hospitals and doctors' surgeries should therefore create spaces that convey a positive and calming atmosphere.
- Hygiene: Good hygiene is particularly important in hospitals and other medical facilities. The architecture can help to prevent the spread of germs and infections.

The influence of medicine on architecture

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- New medical procedures: New medical procedures often require new or adapted buildings and rooms. For example, operating theatres for minimally invasive procedures must be equipped differently to operating theatres for open surgery.
- Needs of patients and staff: The needs of patients and staff must be taken into account when planning and designing medical facilities. For example, hospitals must be barrier-free and provide sufficient space for wheelchairs and other aids.
- Hygiene requirements: Hygiene requirements in medical facilities are very high. The architecture must take these requirements into account and use materials and surfaces that are easy to clean and disinfect.
- Technical equipment: Medical facilities require a wide range of technical equipment. The architecture must take into account the integration of this equipment into the buildings and rooms.



The Architecture of The Anatomy Room in a Historical Context: A Journey Through The Development of Medical Teaching Facilities

The anatomy room, as one of the most important rooms in medical teaching facilities, has undergone a fascinating architectural development throughout history. From humble beginnings in medieval universities to ultra-modern 21st century facilities, the architecture of the anatomy room reflects not only the technological advances but also the cultural, social and ethical contexts of its time.

In the early years of anatomical studies, particularly during the Middle Ages, dissections were often performed in modest rooms that offered little space for spectators. These beginnings were strongly influenced by the religious and cultural beliefs of their time, which often regarded the study of the human body as taboo and disrespectful. The architecture of these rooms was therefore often simple and functional, without much emphasis on aesthetic or ergonomic aspects.

With the Renaissance and the beginning of the scientific revolution in the 16th century, attitudes towards anatomy changed and with them the architecture of anatomy rooms. New scientific findings and the Enlightenment promoted the understanding of the human body as an object of study and led to an increase in dissections and anatomical studies. Anatomy rooms became larger and better equipped to meet the increased demand for space and resources. Architects began to equip the rooms with large windows, high ceilings and special lighting to ensure optimal visibility and working environment.

In the 19th century, especially with the advent of modern medicine and the institutionalization of medical studies, anatomy rooms underwent a further transformation. New technologies such as gas lighting, steam heating and ventilation systems were introduced to improve working conditions and protect the health of students and lecturers. The architecture of the anatomy rooms was also influenced by neoclassicism and other architectural trends, which resulted in magnificent, monumental buildings designed to emphasize the status of medical teaching as an academic discipline.

In the 20th century, anatomy rooms were further modernized and adapted to the requirements of modern medicine. Advances in technology, such as the introduction of electric light, air-conditioned rooms and advanced medical equipment, changed the way in which anatomical studies were conducted. The architecture of anatomy rooms became increasingly functional and efficient, with more space for computerized imaging, virtual dissections and interactive teaching methods.

Today, anatomy rooms are at the forefront of medical education and research and are state-of-the-art facilities equipped with the latest technologies and teaching methods. The architecture of these rooms reflects not only the current state of science, but also the ethical and pedagogical principles that guide modern medical teaching. Despite these advances, however, the central importance of the anatomy room as a place of learning, research and discovery in the medical world remains unchanged.



The Narrenturm (Fool's Tower) in Vienna: a Historical Landmark of Psychiatry

The Narrenturm, located in the heart of Vienna, is a remarkable building with a fascinating history that is closely linked to the development of psychiatry. Also known as the "madhouse of the Vienna General Hospital", the Narrenturm was built in the 18th century and served as the city's first psychiatric hospital.

The construction of the Narrenturm goes back to Emperor Joseph II, who decided to erect a special building for the accommodation and treatment of mentally ill people as part of his healthcare reforms. Construction began in 1784 and was completed under the direction of architect Isidor Canevale. The Narrenturm was designed as a round tower with seven floors and offered space for up to 200 patients.

The structure of the Fools' Tower was unusual as it housed the inmates in small, separate cells arranged along a spiral corridor. These cells, which had bars on the outside, were intended to allow better monitoring and control of the patients, but were often overcrowded and insufficiently ventilated. The conditions in the Fools' Tower were therefore often deplorable, and the treatment of the inmates was often inadequate and inhumane.

Despite its shortcomings, the Fools' Tower played an important role in the history of psychiatry, as it contributed to the development of new treatment methods and research into mental illness. During the 19th century, leading psychiatrists such as Theodor Meynert and Julius Wagner-Jauregg began working at the Narrenturm and developing innovative approaches to the treatment of mental illness. Their work helped to improve the understanding of mental illness and expand treatment options for those affected.

Over time, however, the Narrenturm lost its importance as a psychiatric institution, as more modern treatment methods and the deinstitutionalization of mentally ill people led to changes in the healthcare system. In the 1860s, the Narrenturm was finally closed and the remaining patients were transferred to other institutions.

Today, the Narrenturm is part of the Natural History Museum Vienna and houses a collection of medical artifacts and exhibits documenting the history of psychiatry and medicine in Austria. Visitors can tour the tower and learn more about the fascinating history of this historic building, which occupies an important place in the development of psychiatry and healthcare.

The Narrenturm thus remains not only an architectural landmark of Vienna, but also a symbol of the advances and challenges in the treatment of mental illness throughout history. Its history reminds us how far medicine has come and how important it is to continue investing in research, prevention and treatment of mental illness.



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The Otto Wagner Hospital: an Architectural Icon of Viennese Art Nouveau

The Otto Wagner Spital, also known as the "Pavillon des Sozialmedizinischen Zentrums Baumgartner Höhe", is an important hospital in Vienna, Austria, known for its unique architecture and historical value. Named after the renowned Austrian architect Otto Wagner, the hospital was built in the early 20th century and is today a symbol of the innovations and artistic richness of Viennese Art Nouveau.

Construction of the Otto Wagner Hospital began in 1904 and was carried out under the direction of Otto Wagner and his assistant Robert Oerley. The hospital was conceived as part of a comprehensive plan to modernize the healthcare system in Vienna and ensure better medical care for the city's growing population. Wagner designed the hospital according to the most modern medical and architectural principles of his time, creating a structure that was both functional and aesthetically pleasing.

A characteristic feature of the Otto Wagner Hospital is its innovative architecture, which is typical of Viennese Art Nouveau. The buildings are characterized by clear lines, organic forms and decorative elements that create a harmonious combination of art and function. Wagner used materials such as glass, steel and ceramics to create a modern and hygienic environment that met medical requirements and was aesthetically pleasing at the same time.

Another striking feature of the Otto Wagner Hospital is the integration of art and nature into the design. The buildings are surrounded by extensive gardens and green spaces, providing a calming and relaxing environment for patients and visitors. In addition, sculptures, murals and other works of art adorn the hospital's interiors, helping to create a positive and inspiring atmosphere.

While the Otto Wagner Hospital initially served as a hospital, it has served various functions and purposes over the years. During World War II, the hospital served as a military hospital for wounded soldiers, and after the war it became a leading center for medical research and education in Vienna. Today, the Otto Wagner Hospital is home to the Baumgartner Höhe Social Medical Center, which provides a wide range of healthcare services to the community.

The Otto Wagner Hospital is not only an important medical center, but also an important cultural and architectural heritage for Vienna and Austria. Its unique architecture and artistic richness make it a popular destination for tourists and art lovers from all over the world. The Otto Wagner Hospital is a fascinating example of the combination of art and medicine and a testament to the innovative ideas and creative vision of its creator, Otto Wagner.

The Sanatorium in Purkersdorf: a Masterpiece of Art Nouveau by Josef Hoffmann

The Sanatorium in Purkersdorf, designed by the Austrian architect Josef Hoffmann, is an outstanding example of Art Nouveau architecture in Austria. It was commissioned by the Viennese banker and patron Moriz Gallia and completed in 1901. The Sanatorium is not only an architectural jewel, but also an important cultural heritage that reflects Hoffmann's innovative ideas and unique style.



The Sanatorium, also known as Villa Gallia, is located in Purkersdorf, a small town near Vienna. It was designed as a residence for Moriz Gallia and his family and also served as a venue for social gatherings and cultural events. Hoffmann designed the building as a total work of art, seamlessly combining architecture, interior design, furniture design and landscaping.

A striking feature of the Sanatorium is its extraordinary façade, which is characterized by clean lines, geometric shapes and decorative elements. Hoffmann used traditional materials such as brick and stone, combined with modern materials such as glass and steel, to create a unique and appealing aesthetic. The façade is decorated with ornamental details, including floral motifs, geometric patterns and stylized animal figures typical of the Art Nouveau style.

Inside the Sanatorium, Hoffmann continued his avant-garde style by using clean lines, open floor plans and innovative interior design. The interiors are furnished with high-quality materials and furniture designed by Hoffmann himself. The rooms are flooded with light and generously proportioned, and large windows offer a magnificent view of the surrounding countryside.

A particular highlight of the Sanatorium is the garden, which was designed by Hoffmann as an extension of the living space. The garden is designed as a harmonious combination of nature and architecture, with terraces, paths and plants that emphasize the beauty of the surroundings. Hoffmann also integrated sculptures and water elements into the garden to create a calm and inspiring atmosphere.

The Sanatorium in Purkersdorf is an outstanding example of Josef Hoffmann's vision and talent as an architect and designer. His unique style and innovative approach to Art Nouveau architecture have made the Sanatorium a significant cultural and architectural legacy that continues to inspire admiration and inspiration to this day. As a masterpiece of Art Nouveau, the Sanatorium remains a testament to the creative power and aesthetic sophistication of Josef Hoffmann and an important cultural legacy for the people of Austria and the world.

Ignaz Semmelweis: the pioneer of hygiene

Ignaz Semmelweis was an important physician of the 19th century who is known for his pioneering contributions to hygiene and the fight against infectious diseases. Born on 1 July 1818 in Buda, then part of the Kingdom of Hungary, Semmelweis developed groundbreaking findings during his career that revolutionized medicine and laid the foundations for modern hygiene practices.

Semmelweis received his medical training at the University of Vienna and graduated in 1844. His professional career initially took him to the Vienna General Hospital, where he worked as an assistant doctor in obstetrics. During this time, Semmelweis observed an alarming increase in the mortality rate of women suffering from puerperal fever, a widespread and fatal infectious disease.

Medical practice at the time included student obstetrics, with medical students working directly in the maternity wards after autopsy. Semmelweis noticed that the mortality rate for women cared for



by the students was significantly higher than for women cared for by midwives. This observation was the starting point for Semmelweis' groundbreaking discovery.

After extensive research and experimentation, Semmelweis came to the conclusion that puerperal fever was caused by poor hand hygiene on the part of doctors and students. He introduced the use of chlorine solution to disinfect hands and demanded strict adherence to hygiene measures in hospitals. These simple but effective measures led to a dramatic reduction in the mortality rate from puerperal fever and proved the importance of hygiene in medical practice.

Despite his successes, Semmelweis' theory met with strong resistance and was rejected by many of his contemporaries. The idea that diseases could be transmitted by invisible pathogens was not yet generally accepted at the time. Semmelweis himself was unable to fully explain his discoveries, as the existence of bacteria was not yet known at the time.

Frustrated by the lack of recognition and the continuing resistance to his work, Semmelweis left Vienna and returned to Hungary. There he continued his efforts to promote hygienic practices, but was unable to achieve the same effect as in Vienna. Semmelweis died in tragic circumstances on August 13, 1865, aged just 47, after being committed to a psychiatric institution.

Although Semmelweis did not receive the recognition he deserved during his lifetime, his work was later recognized as a milestone in the history of medicine. His findings laid the foundations for modern hygiene practices and contributed significantly to the development of infection control. Ignaz Semmelweis remains an inspirational figure whose dedication and determination helped to save countless lives and improve healthcare worldwide.

Sigmund Freud: The father of psychoanalysis

Sigmund Freud, born on May 6, 1856 in Freiberg, Moravia, and died on September 23, 1939 in London, was an Austrian neurologist and the founder of psychoanalysis. His theories and ideas had a significant influence not only on psychology, but also on many other areas of the humanities.

Freud grew up in Vienna and studied medicine at the University of Vienna, where he initially specialized in neuroscience. His early work focused on the anatomy and physiology of the nervous system, and he made significant contributions to the study of the brain and nerve currents. However, during his clinical work with patients, Freud became interested in psychological phenomena that he could not explain with neurological models alone.

It was above all his work with hysterical patients that led Freud to develop the foundations of psychoanalysis. He came to the conclusion that many psychological disorders can be traced back to unconscious conflicts and repressed drives. Freud developed a number of techniques to make these unconscious processes accessible, including free association and dream interpretation.

A central concept in Freud's work was to divide the human psyche into three parts: the id, the ego and the superego. The id represents the unconscious drives and instincts that are innate to humans, such as the desire for food and sex. The superego is the moral authority that is shaped by



the norms and values of society and controls behavior. The ego acts as a mediator between the impulsive demands of the id and the moral demands of the superego.

Another important contribution Freud made to psychology was his theory of psychosexual development. He argued that a person's personality is formed through a sequence of developmental stages, each associated with different sexual desires and conflicts. These phases include the oral phase, the anal phase, the phallic phase, the latency phase and the genital phase.

Although Freud's ideas were controversial and continue to be the subject of intense debate, they have undoubtedly shaped modern psychology. His emphasis on the importance of the unconscious, his work with dreams and his emphasis on the role of childhood experiences have revolutionized the understanding of the human psyche. In addition, Freud's influence has had a significant impact on other disciplines such as literature, art and film.

Despite his importance and influence, Freud was also a controversial figure. Some of his ideas were criticized by other psychologists and intellectuals, and his personal history was marked by personal conflicts and controversies. Nevertheless, Sigmund Freud remains one of the most influential figures in the history of psychology and his work continues to inspire and challenge students, researchers and clinicians around the world.

Theodor Billroth: a pioneer of modern surgery

Theodor Billroth, born on April 26, 1829 in Bergen auf Rügen and died on February 6, 1894 in Abbazia, was an important surgeon of the 19th century who is known for his pioneering contributions to surgical practice and training.

Billroth began his medical studies at the University of Greifswald and later continued at the University of Berlin, where he was influenced by famous scientists such as Rudolf Virchow. After completing his studies, he initially devoted himself to pathology before turning to surgery. His career took him to various renowned medical institutions in Germany, Austria and Switzerland.

One of Billroth's most significant contributions to surgery was his work in the field of gastric surgery. He performed numerous operations on the stomach and developed innovative techniques for the treatment of gastric diseases and injuries. Of particular note was his successful performance of the first gastric resection in 1881, in which he successfully removed part of a patient's stomach to remove a life-threatening tumor. This operation was a milestone in the history of surgery and paved the way for further advances in the field.

Another important contribution Billroth made to surgery was his pioneering work in the field of antisepsis and asepsis. He recognized the importance of hygienic measures to prevent infection and introduced rigorous sterilization procedures in his operating theatre. He also contributed to the development of new instruments and techniques to improve the safety and effectiveness of surgical procedures.



In addition to his clinical achievements, Billroth was also a dedicated teacher and scientist. He taught at several medical schools and trained numerous surgeons who spread his methods and principles throughout the world. In addition, he published a large number of scientific articles and books that made a significant contribution to the medical literature of his time.

Despite his outstanding achievements, Billroth was also a controversial figure who garnered both praise and criticism. Some of his methods and views were questioned by his contemporaries, and his personal attitude and political beliefs led to tensions and conflicts in the medical community. Nevertheless, Theodor Billroth remains one of the most influential figures in the history of surgery, whose work and legacy can still be felt in modern medicine today.

Overall, Theodor Billroth was not only an outstanding surgeon of his time, but also a visionary thinker whose work and ideas had a lasting impact on the development of medical science. His legacy lives on in the advances and achievements of modern surgery and serves as an inspiration for future generations of doctors and scientists.

Viktor Frankl: A life dedicated to the search for meaning

Viktor Emil Frankl, born on March 26, 1905 in Vienna, Austria-Hungary, and died on September 2, 1997 in Vienna, was an important neurologist, psychiatrist and founder of logotherapy, a school of psychotherapy that focuses on the search for meaning and purpose in life.

Frankl grew up in a Jewish family and experienced the challenges and suffering of life at a young age. His early experiences, including the loss of his parents and other family members in concentration camps during the Holocaust, had a lasting impact on his thinking and his work. During his time in the Auschwitz concentration camp, Frankl developed his conviction that even under the most extreme conditions of suffering and hopelessness, human beings have the ability to find meaning and lead fulfilling lives.

After the war, Frankl continued his work as a psychiatrist and began to incorporate his experiences and insights from his time in the camp into his therapeutic practice. He founded logotherapy, a form of therapy based on existential analysis, which aims to discover and realize the individual meaning of life. At the heart of this therapy is the conviction that human beings have a deep-rooted longing for meaning and significance and that the pursuit of this meaning is a fundamental driving force behind human behavior.

A central concept in logotherapy is the idea of "self-transcendence", which states that human beings strive beyond themselves and are committed to something greater than themselves, be it a higher value or a greater meaning. Frankl emphasized the importance of responsibility and freedom in the pursuit of meaning, arguing that even in the most difficult situations, man's ability to choose and search for meaning remains sacrosanct.

Frankl's work, in particular his best-known book "...nevertheless saying yes to life: a psychologist experiences the concentration camp", which was first published in 1946, had an enormous influence on the psychological and philosophical landscape of the 20th century. His ideas



influenced not only psychotherapy, but also other areas such as philosophy, religion and personal development.

Despite his importance and influence, Frankl always remained humble and committed to helping others find meaning and purpose in their lives. He taught at various universities around the world, gave lectures and seminars, and advised individuals and organizations on finding meaning and personal development.

Viktor Frankl's legacy lives on in his work and in the hearts of the countless people who have been inspired by his teachings. His message of hope, resilience and meaningfulness is as relevant today as ever, reminding us that even in life's darkest hours, the ability to search for meaning and significance can give us the strength to carry on and lead a fulfilling life.

Karl Landsteiner: The discovery of blood groups

Karl Landsteiner, born on June 14, 1868 in Vienna, Austria-Hungary, and died on June 26, 1943 in New York City, was an Austrian physician and immunologist known for his pioneering discoveries in the field of blood group research.

Landsteiner's most significant achievement was the discovery and classification of blood groups, which he made while working at the Vienna Institute of Pathology in the early years of the 20th century. His work began in 1900 when he discovered that red blood cells differ in different people due to certain antigens present on their surface. This discovery formed the basis for the classification of human blood into different groups, which later became known as the ABO blood group system.

Landsteiner's discovery had far-reaching implications for medicine and transfusion practice. For the first time, it was possible to safely transfuse blood between different people without causing life-threatening reactions. His work saved countless lives and revolutionized surgery by enabling safer blood transfusions.

Landsteiner also discovered the Rh blood group system, which plays another important role in transfusion medicine. His discoveries laid the foundation for understanding the inheritance of blood groups and contributed to the development of test procedures that are now used worldwide to determine blood groups.

In addition to his contributions to blood group research, Landsteiner also made significant contributions in the field of immunology. He investigated the mechanisms of immune defense and discovered important immune reactions that help to fight diseases and protect the body from infections. His work contributed to the development of vaccines and other therapeutic interventions that are used today to treat a variety of diseases.

Due to his Jewish ancestry, Landsteiner fled Austria in 1938 to escape the Nazis and emigrated to the United States, where he continued his work at the Rockefeller Institute for Medical Research in



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New York. There he continued his groundbreaking research and continued to make significant contributions to medical science.

Karl Landsteiner was honored with numerous awards and honors for his work, including the Nobel Prize in Physiology or Medicine in 1930 for his discoveries in the field of blood groups. His legacy lives on in the foundations of modern transfusion medicine and immunology, and his discoveries have had a lasting and positive impact on medicine and the health of people around the world. Landsteiner's lifelong commitment to the study and improvement of human health makes him one of the most outstanding figures in the history of medicine.

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