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Air raid shelter template

In an air strike in Separatist Donetsk, Eastern Ukraine, March 2015 Kleines Berlin ('Little Berlin' in German) is a complex of underground aerial search tunnels dating back to World War II that still exists in Trieste, Italy Part of the series of The Original Prehistoric Prehistoric History Early Modern Modern Modern Modern Industrial Industrial Industrial Industrial Space of Fourth Generation Battlespace Air Earth Cold Jungle Mountain Urban Sea Amphibious Blue Green Surface Underwater Cyber Weapons Artillery Artillery Artillery Artillery Artillery Cavalry Class Combined Class Ground Cyber Defense Disinformation Drone Electronic Infantry Lawfare Loitering Music Nuclear Psychological Unconventional Tactics Refugee List of Military Tactics Military Tactics Battle Cavalry Charge Counterattack Fighting Rebels Defeat in Detail Foxhole Guerrilla Morale Rapid Domination Firing Tactical Target Saturation Trench Download Operational Blitzers Defensive Deep Operation Maneuver Task Maneuver Group Strategy List of Military Strategies and Concepts Attrition Counter-Offensive Climax Defense In Depth Fabian Mosaic Deactivation Defensive Depth Marine Offensive Offensive Ground Grand Strategy Limitation Economically Limited Philosophical Political Strategic Technology Theater General War Administrative Branch Policy Staff Training Sociology Organization Command and Control Doctrine Engineers Technology and Equipment Order ordered Initial Military Command Recruitment of Military Service Recruiting Military Specialty Women in Military Transgender Children and Military Service Sexual Harassment in Military Counter Recruitment Logistics Military-Industrial Complex Military Industry Material Industry Supply Chain ManagementTechnating Science Power Forecast Loss of Strength Gradient Court-Martial Perfidi Naval Law Military Airspace Theory Supremacy Overmatch Related Asymmetric Warfare Crushed Military Theory Cold War Demirization Theory De-Depreciation Theory Devaluation Horses in War Illegal War Mercenaries Military Campaign Military Operation Network-Oriented Military Operations Research Principles of War Proxy War Security Triplug military military military military war games War games War War War War War War , also known as bomb shelter, are structures to protect non-fighters as well as fighters against enemy attacks from the air. They are similar to bunkers in many of them, although they are not designed to defend against ground attack (but many of them have been used as defensive structures in such situations). [Reference is necessary] Before The Second World War, an Air Raid Safeguards Committee was set up in the United Kingdom in May 1924. In years, little progress has been made with shelters irreparable conflict between the need to send the public underground for shelter and the need to be detained above ground to protect against gas attacks. In February 1936, the Minister of the Interior appointed a Technical Committee on Structural Precautions against Air Strikes. By November 1937, there had only been slow progress due to a serious data gap on which all project recommendations could be based, and the Committee suggested that the CRR should have its own structural safeguards research unit, rather than relying on the research work carried out by the Bombing Test Commission to help develop the design and strategy of the bombing. This proposal was eventually implemented in January 1939.[1] During the Munich crisis, local authorities dug trenches to provide shelter. After the crisis, the British government decided to turn them into a permanent function, with a standard design of prefabricated concrete digs. Unfortunately, they turned out very badly. They also decided to issue free shelter-free Anderson for free to the Anderson Shelter and provide steel supports to create shelters in suitable basements. [1] World War II air raid shelters were built to serve as protection against enemy air raids. Existing buildings designed for other functions, such as metro stations (subway stations, pipes or metro), tunnels, basements in houses or basements in larger enterprises and railway arches, above ground, are suitable for protecting people during air raids. [2] A commonly used shelter, known as the Anderson Shelter, will be built in a garden and equipped with beds as a refuge from air raids. [3] Basements This section does not cite sources. Please help improve this section by adding quotes to trusted sources. Non-material can be challenged and removed. Find sources: Air raid shelter - news · newspapers · books · scientist · JSTOR (March 2019) (Learn how and when to remove this message about the template) An air raid shelter on display at the Günther Leonhardt Aviation Museum in Hanover Germany cellars have always been much more important in continental Europe than in the UK and especially in Germany almost all houses and apartment blocks have been and are still built with cellars. Air raids during The Second World War in Germany can be much more easily enforced by the authorities than is possible in the UK. All this was necessary to establish that the cellars are ready to accommodate all the inhabitants of a building; all the defenders of the cellar and the windows were in place; that access to the cellar is safe in the event of an air strike; that once inside, passengers have been secured for any incidents other than direct strikes during the air strike and that there is a means of escape. Inadequate cellars and basements become in the firestorms during incendiary attacks on the larger German cities, especially Hamburg and Dresden. When burning buildings and apartment apartment above them collapses in the raging winds (which could reach over 800 °C), the inhabitants often get stuck in these halls, which are also overcrowded after the arrival of residents from other buildings that were dangerous in previous attacks. Some passengers died from heat stroke poisoning or carbon monoxide poisoning. Hochbunker Hochbunker in Trier Winkelturm in Wünsdorf, Brandenburg Hochbunkmer(s), high bunkers or block-houses, are especially German type of construction designed to relieve the pressure that German authorities face to accommodate an additional number of people in high-density residential areas, as well as pedestrians on the streets during air raids. Unlike other shelters, these buildings were considered completely bombed. They also have the advantage of being built upwards, which is much cheaper than descending excavations. In allied cities, there are no equivalents of hochbunkers. [reference is necessary] Hobbencters usually consist of large concrete blocks above the ground with walls between 1 m and 1.5 m thick and with huge lintels above the doors and openings. They often have a constant internal temperature from 7 °C to 10 °C, making them perfectly suitable for laboratories, both during and after the war. They are used to protect people, administrative centers, important archives and works of art. [citation needed] Their structures have benefited from many shapes: usually consisting of square blocks or of low, long rectangular or triangular shapes; straight towers per square plan, rising to great heights, or round towers similar buildings, even pyramid structures. Some of the circular towers have chelatic floors that gradually curve the way up the round walls. Many of these structures can still be seen. They have been converted into offices, storage rooms; some are even adapted for hotels, hospitals and schools, as well as for many other peaceful purposes. In Schöneberg, a block of apartments was built above the Palaces of Air Raid Shelter after World War II. During the Cold War, THE US used the shelter to store food. [4] [5] [6] The cost of demolishing these buildings after the war would have been enormous, as it turned out that attempts to demolish one of Vienna's six so-called Flak towers turned out to be. The attempted demolition caused no more than a crack in one of the walls of the tower, after which efforts were abandoned. Only the zoo in Berlin was successfully destroyed. [the reference is necessary] One of the specific variants of Hochbunker is Winkeltürme, named after its designer Leo Winkel from Duisburg. Winkel patented its design in 1934, and since 1936 Germany has built 98 Winkeltürme of five different types. The towers had a conical shape with walls that curved down to a reinforced base. The dimensions of the towers vary. The diameters are between 8.4 and 10 meters and the height between 20 and 25 meters. The walls of the towers have a minimum thickness for reinforced 0.8 m and 1.5 m for ordinary concrete. The towers were able to shelter between 164 and 500 people, depending on the species. The aim of Vikelturme and other hochbunkers is to protect workers in railway locators and industrial areas. Due to their shape, the towers become known colloquially as stumps of cigars or sugar beet. [The reference is necessary] The theory behind Winkeltürme is that the curved walls will deflect any bomb hitting the tower, directing it to the base. The towers had a small footprint that was probably more defensive. An American bomb struck a tower in Bremen in October 1944; The bomb went off through the roof, killing five people inside. The UK's Winery This section does not cite sources. Please help improve this section by adding quotes to trusted sources. Non-material can be challenged and removed. Find sources: Air raid shelter - news · newspapers · books · scientist · JSTOR (November 2020) (Learn how and when to remove this template message) Cellars in the UK were mostly included only in larger houses, and in houses built up to the period of the First World War, after which detached and semi-detached properties were built without basements, usually to avoid higher construction costs. As the house building has increased significantly between the wars, the lack of basements in more recent homes has become a major problem in air raid programmes (ARP) in The UK during The Second World War. It comes after it emerged that Germany is considering air strikes as a means of demoralising the population and destroying power lines in the UK. The initial recommendations were that the hosts should shelter under the stairs. Authorities later supplied materials to households to build municipal shelters and shelters Morrison and Anderson. [The reference is necessary] Basements basements also became available for use of air raid shelters. Basements were used under factory premises, schools, hospitals, department stores and other companies. These shelters can lead to additional hazards, as heavy machinery and materials or water storage facilities above the shelter, as well as insufficient auxiliary structures that threaten to cause the collapse of the basements. When Wilkinson's lemonade factory in North Shields suffered a direct hit on Saturday, May 3, 1941, during a German attack on the north-east coast of England, 107 residents lost their lives when heavy machinery fell through the ceiling of the basement where they were sheltered. [7] [8] Railway arches and underpasses were also used in the UNITED Kingdom to protect air strikes at all times during The Second World War. Railway arcs are deep, curved structures of brick or concrete located in the vertical side walls of the railway lines, which were originally intended for landfills, etc. Arches are usually covered with wooden or brick walls, thereby a significant amount of protection against air raids – provided, of course, that railways are not the main target of the attack at any given time and are therefore more likely to suffer direct strikes. Each arch can hold anything from about 60 to 150 people. However, fewer people can find shelter at night, as sleeping places for residents occupy more than the available space – a restriction that applies to any other type of shelter. The subway was a real thoroughfare also in the form of arches, usually allowing passage under the railway lines. [9] [10] Before the war, the policy of the shelter was determined by Sir John Anderson, then Lord Priley Seal and, at the time of the declaration of war, Minister of the Interior and Minister for Home Security. Anderson announced the policy to Parliament on 20 April 1939[11] on the basis of a report by a committee chaired by Lord Haley. This confirms the policy of dispersed and takes advantage of the use of deep shelters, including the use of metro stations and underground tunnels as public shelters. The reasons were the spread of diseases due to the lack of toilet facilities in many stations, the inherent danger of people falling into the lines, and that people sheltering in stations and tunnels may be tempted to stay in them day and night because they would feel safer there than outside stations. None of these concerns were supported by experience during the bombing of The First World War, when eighty specially adapted metro stations were put into use, but in a highly controversial decision in January 1924, Anderson, then chairman of the Air Defence Committee, ruled out the possibility of refuge at metro stations in the future. After the intense bombing of London on 7 September 1940 and the overnight attacks of 7/8 September, there was considerable pressure to change policy, but even after a review on 17 September, the government stood firm. On September 19, The Interior Ministry's parliamentary secretary, William Mabon, urged the public not to leave their Anderson homes for shelters, saying it deprived others of shelter. We will improve facilities in existing shelters, he promised. We are about providing better lighting and better accommodation for sleeping and better hygiene. The Ministries of Home Security and Transport jointly made an urgent complaint, telling the public to refrain from using metro stations as air raids, unless urgently needed. However, the government faces an episode of mass disobedience. On the night of September 19/20, thousands of Londoners took matters into their own hands. They were hiding in the Shelter Pipes. At some stations they began arriving as early as 4:00, with beds and bags of food to support them for the night. At the time the the peak was had already bet their pitches on the platforms. The police didn't intervene. Some station managers, on their own initiative, provided additional toilet facilities. Transport Minister John Wright and the chairman of London Transport, Lord Ashfield, inspected Holborn station to see the conditions for themselves. Then the government realized they couldn't contain this popular uprising. On September 21, she abruptly changed her policy, removing her objections to the use of tube stations. In what she called part of the deep shelter policy, she decided to close the short section of the Azzlley line from Holborn to Aldwych and convert various sections for specific military use, including a public air shelter in Oldwich. Floodgates are installed in various places to protect the network if bombs have penetrated the tunnels under the Thames, or large plumbing near stations. Seventy-nine stations are equipped with beds for 22,000 people, equipped with first aid and equipped with chemical toilets. 124 canteens open in all parts of the pipe system. Shelters are appointed, the function of which is to maintain an order, to give first aid and assistance in case of flooding of the tunnels. The London underground station used as an air-to-air refuge during The Business of The Second World War (e.g. Plessey Ltd) was allowed to use the underground and unopened tunnels, government offices were installed in others and the centre of London's anti-aircraft service used a power station. However, metro stations and tunnels are still vulnerable to direct impact, and several such incidents occurred: on October 14, 1940, a bomb penetrated the road and tunnel of the Balham tube station, blew up plumbing and sewer pipes and killed 66 people. On January 11, 1941, on January 11, 1941, on January 11, 1941, it caused a crater of 100 meters by 100 feet; The road above the station collapsed, killing 56 passengers. However, the highest casualties were caused by an incident at the unfinished Bethnal Green station on March 8, 1943, when 1,500 people entered the station. The crowd suddenly came close, hearing the unfamiliar sound of a new type of rocket being launched nearby. Someone stumbled across the stairs, and the crowd shoved, fell on top of each other, and 173 people were crushed to death in the crash. However, London Underground system during the war was considered one of the safest means of protecting relatively many people in a high-density area of the capital. About 170,000 people sheltered in tunnels and train stations during World War II. Although not a large number compared to the total number of inhabitants of the capital, it almost certainly saved many people who will probably have to find an alternative, less secure means of protection. Artists and photographers such as Henry Moore and Bill Brandt have been appointed as military artists to document life The London Refuge during The Second World War. Other tunnels Many other types of tunnels have been adapted to protect the civilian population, as well as military and administrative establishment in the UK during the war. Some were built long before that, some were part of an ancient defense system, and some belonged to commercial enterprises, such as coal mining. Victoria's tunnels in Newcastle-upon-Tyne, for example, were completed as long ago as 1842, and used to transport coal from colliers to the River Tyne, were closed in 1860 and remained so until 1939. 12m deep in places, the tunnels stretching into parts beneath the city of Newcastle have been turned into 9,000-capacity shelters. In addition, tunnels linked to the landing stages built on the River Iruel in Manchester in the late 19th century were also used as air raid shelters. The large medieval maze of tunnels beneath Dover Castle was originally built as part of the defensive system of approaches to England, continued over the centuries and further excavated and reinforced during World Wars I and II until it was able to combine large parts of the secret defence systems protecting the British Isles. On May 26, 1940, it became the headquarters of Vice Admiral Ramsay of Operation Dynamo, which targeted the rescue and evacuation of up to 338,000 servicemen from France. In Stockport, six miles south of Manchester, four sets of underground tunnels for civilian refuge were dug into the red sandstone on which the city centre stands. Preparations began in September 1938, and on October 28, 1939, the first set of shelters was opened. (Stockport was only bombed on October 11, 1940) The smallest of the shelters in the tunnel can accommodate 2,000 people and the largest 3,850 people (subsequently expanded to 6,500 people). The largest of stockport Air Raid shelters are open to the public as part of the city's museum service. In south-east London, residents took advantage of the Chislehurst Caves under Chislehurst, a 22-kilometre (35km) cave that had existed since the Middle Ages to harvest chalk and flint. Street general shelter This section does not cite sources. Please help improve this section by adding quotes to trusted sources. Non-material can be challenged and removed. Find sources: Air raid shelter - news · newspapers · books · scientist · JSTOR (November 2020) (Learn how and when to remove this template) In the UK it was recognised early on that public shelters in open spaces, especially near the streets, are urgently needed for pedestrians, drivers and passengers in passing vehicles, etc. carrying out the work under the supervision of the These shelters consist of 14-inch brick walls and 1 foot (0.30 m) reinforced concrete roofs, similar to, but much larger than, the private shelters in the courtyards and gardens that were introduced a little later. Municipal shelters were usually designed to house about fifty people, and are divided into different sections of internal walls with openings connecting different parts. The sections are usually furnished with 6 beds. Construction work then continued quickly until the resources of concrete and bricks began to run out due to the excessive demand they had to impose so suddenly. Also, the implementation of the shelters in the early street was a serious blow to public trust. Their walls were rocked either by an earth blow or by a blast, and the concrete roofs fell on the helpless inhabitants, and that was there to see. [1] At the same time, rumors of accidents spread, for example in one case people drowned due to the bursting of the shelter with water. Although much better projects are being introduced, whose productivity has been proven in explosion attempts, utility shelters became highly unpopular and soon after, households were encouraged to build or build private shelters on their properties or in their houses, with materials supplied by the government. Anderson shelters Un harmed Anderson in 2007; this shelter has seen the use after the war as a shed Wikimedia Commons has media related to the Anderson shelters. Children preparing to sleep at the Anderson Shelter in their living room during frequent attacks on Bournemouth in 1941. It was named after Sir John Anderson, then Lord Privy Seal with special responsibility for preparing precautions for air strikes immediately before the outbreak of The Second World War, and he was the one who then initiated the development of the shelter. [15] [16] After an assessment by Dr David Anderson, Bertramen Lawrence Hearst and Sir Henry Jupp, from the Institute of Engineers, the design was put up for production. Anderson's shelters are designed to house up to six people. The basic principle of protection is based on curved and straight galvanized steel panels. Six curved panels are locked together at the top, so that forming the main body of the shelter, three straight leaves on both sides and two in a row panels are fixed for each end, one containing the door – a total of fourteen panels. A small drain machine was often collected in the floor to collect rainwater flowing into the shelter. The shelters are 1.8 m high, 1.4 meters wide and 2.0 m long. covered with sandbags. When they were buried outside, the earth banks could be planted with vegetables and flowers, that can sometimes be quite an attractive look and thus become the subject of competitions of the best planted shelter among households in the neighborhood. The interior furniture of the shelter was left to the owner and therefore there were large variations in comfort. Anderson's homes are exempt from all households earning less than £5 a week (equivalent to £310 in 2019 when adjusted for inflation). Those with higher incomes are charged £7 (£440 in 2019) for shelter. One and a half million shelters of this type were distributed between February 1939 and the outbreak of war. Another 2.1 million were raised during the war. [17] The big numbers were produced in john summers" Sons" in Shotton on Deedside, with production reaching 50,000 units per week. [18] Anderson shelters do well in blast and earth shock because they have good connectivity and plasticity, which means they can absorb a lot of energy through plastic deformation without breaking down. (This is in contrast to other shelters that use concrete for the sides and roof, which were inherently unstable when disturbed by the effects of an explosion – if the roof rises, the walls fall under static grounding; if the walls are pressed, the roof will be unsupported at one end and will fall.) However, when the trend of the all-night signal was established, it was found that in winter anderson shelters, placed outside, were cold wet holes in the ground and often flooded in wet weather, and so their employment factor would be bad. This led to the development of morrisons indoor shelter. [1] At the end of the war in Europe, households that had received Anderson's shelter were expected to remove their shelters and local authorities began to pull the corrugated board. By contrast, those who wanted to keep their anderson can pay a nominal fee. Because of the large number made and their strength, many Anderson shelters still survive. Many of these people were dug up after the war and turned into a storage shed for use in gardens and allotments. [19] [20] Morrisons Shelter Couple, demonstrating the use of Morrisons shelter Wikimedia, has media associated with the Morrison shelter. At the Morrisons shelter, the official so-called no-fly zone has been found in the area. It was designed by John Baker and named after Herbert Morrison, the home security minister at the time. As a result of the realization of the lack of a residential basement, it is necessary to develop an effective type of shelter indoors. Shelters have gathered in sets to be hung in the home. They are approximately 6ft 6in (2m) long, 4ft (1.2m) wide and 2ft 6in (0.75m) tall, has a solid 1/8in (3mm) plate table top, welded wire mesh sides, and metal llanta mattress type floor. A total of 359 parts and three instruments provided with the package. The shelter was provided free of charge to households whose total income is less than £400 a year (equivalent to £25,000 in 2019). When the head of the engineering department at the University of Cambridge, Professor John Baker (later Lord Baker) presented a student lecture on the principles of the design of the shelter as an interesting introduction to his theory of plastic structure design and it can be summarized as follows: It is not practical to produce a mass-production design that can withstand a direct blow and so it is about choosing a suitable design goal that would save lives in many cases of explosive damage to bombed houses. Inspection of buildings with bombers shows that in many cases a wall of a house was sucked in or blown away by a nearby blast, and the floor of the first floor rotated around the other end (supported by a large intact wall) and killed the residents. Thus, the Morrison Shelter is designed to withstand the fall of the upper floor, of a typical two-storey house that is undergoing a partial collapse. The shelter is designed to absorb this energy through plastic deformation, as it can absorb two or three degrees more energy than elastic deformation. [20] Its design allows the family to sleep under the shelter at night or during raids, and use it as a dining table during the day, making it a practical element in the house. [22] Half a million Morrisons shelters were allocated by the end of 1941, adding another 100,000 in 1943 to prepare the population for the expected attacks of the German V-1 bomb. A review of 44 badly damaged houses found that three people were killed, 13 seriously injured, and 16 slightly injured out of a total of 136 people who occupied Morrisons shelters. Thus, 120 of the 136 escaped from bomb-destroyed houses without serious injury. In addition, the deaths were found to have occurred in a house that suffered a direct hit, and some of the seriously injured were in shelters that had been improperly inflicted on the houses. In July 1950, the Royal Commission into Inventors' Awards of £3,000 (£104,000) to Baker for the design of the Morrisons shelter. [1] Stanton shelters an abandoned Stanton at the abandoned airport, RAF Beaulieu (2007) Wikimedia Commons has media affiliated with stanton shelter. Part 1 of Stanton Ironers, Ilkeston, Derbyshire. The shop for the production of lighting columns for concrete stopped production and turned to concrete air shelters, of which 100,000 tons were produced, mainly for the ministry of air. Reinforced concrete proved to be an ideal material for an air strike shelter, being strong and resistant to impact without deterioration over time. This segment type has a simple design and low cost – any length of shelter can be built from pre-fly steel reinforced concrete segments. The segments are 20 inches wide; a pair of them form an arch 7 feet high and transverse struts have been provided to ensure rigidity. Those mounted on longitudinal carriers that have been cut into the groove to get the foot of each segment. Each pair of sections was nailed to the top of the arch and each cut was also attached to their neighbor, with the joints sealed with a bitumen compound. Convenient processing of these segments allows to be transported to places where it is not possible to reach the narrow access of the car truck. Partially buried in the ground, with an appropriately projected entry point, this nailed shelter provides safe protection against explosion and splints. [24] [25] Other construction facilities were built in residential buildings that were built in an apartment building. There is one surviving example at St Leonard's Court in East Sheen, south-west London. Military occupants include explosive pens at airports for the safety of aircraft crews and maintenance personnel, away from the main buildings of the aviation base. Few shelters can survive a bomb attack. German authorities say the Hochbunkers were completely bombed, but none of the 41 10-ton slam bombers shot down by the RAF at the end of World War II. Two of these bombs were dropped on the U-Bootbunkerwerft Valentin submarines near Bremen and these barely penetrated 4 to 7 m of reinforced concrete, descending on the roof. More recently, the infiltration of the Smart Shelter's smart bombs with laser-guided Amri during the Gulf War in 1991 shows how vulnerable even reinforced concrete coatings are to being ordered with bunker bombs. However, air raid shelters are built to protect civilians, so protection against direct hit is of secondary value. The most important dangers are the blast and shrapnel. It is unlikely that any military enemy will deliberately target civilian shelter, even if it is a bombing town. [The reference is necessary] In modern air raid homes, such as Anderson, they can still be found in back gardens, where they are usually used as sheds or (on the roof covered with land) as vegetable stains. Countries that have kept air shelters intact and in a state of readiness include Switzerland, Spain and Finland. Switzerland This section does not cite sources. Please help improve this section by adding quotes to trusted sources. Non-material can be challenged and removed. Find sources: Air raid shelter - news · newspapers · books · scientist · JSTOR (November 2020) (Learn how and when to remove this message template) Many Swiss houses and apartment blocks still have structurally reinforced, underground basements, often with a concrete door about 40 cm (16 in) In more modern postwar post-war These shelters are often used as a warehouse, with the footprint of the reinforced basement divided into separate storage rooms according to the number of apartments in the house. Basement shelters have built stricter building standards, as the ceiling must protect people seeking shelter from the collapse of the house. Although most Swiss houses offer their own shelters, those not required by law to post directions to the nearest shelter. Spain Air-raid Shelter 307 (Refugi 307) in Barcelona, was built during the Spanish Civil War Barcelona was heavily bombed by the Italian and German air forces during the Spanish civil war, especially in 1937 and 1938. The tunnels were used as shelters at the same time that the population had taken up the construction of bomb shelters under the coordination of a civil defence commission (Catalan: Junta defensa passiva) providing planning and technical assistance. Hundreds of bomb shelters have been built. Most of them are saved, but only a few are well preserved. Among them stand out Plaça del Diamant refuge, as well as air shelter 307 (Refugi 307), today one of the sites of the historical monuments of Barcelona's history. Other cities with Spanish Civil War bomb shelters already available are Madrid, Guadalajara, Alcalá de Henares, Santander, Haen, Alcañiz, Alcoy, Valencia and Cartagena. During the war, Cartagena, an important naval base, was one of the main targets of Franco's bombers. Cartagena suffered between 40 and 117 bombings (sources were mixed on the number of attacks). The largest air raid shelter in Cartagena, which can house up to 5,500 people, has been a museum since 2004. [27] Israel Inside an Israeli bomb shelter in 2012, Israel required all buildings to have access to the 1951 air shelters, and all new apartments had access to Merkhav Mugan. All medical and educational facilities are prepared for chemical, biological, radiological and nuclear (CRBN) attacks (as of 2010) (as an example, each cabinet is built to withstand a direct missile attack); some of the closed-loop air systems are designed and can be resistant to chemical agents for short periods of time; in addition, all must include chemical air filtration systems. Public air raid homes are usually used as play rooms in peacetime, so that children feel comfortable getting into them in times of need and will not be scared. [28] [29] [30] [31] [32] Finland This section does not cite sources. Please help improve this section by adding quotes to trusted sources. Non-material can be challenged and removed. Find sources: Air raid shelter - news · newspapers · books · scientist · JSTOR (March 2019) (Learn how and when to remove this template) Normal S1-shelter door; S is shortened by suoja (protection, shelter) Finland has over 40,000 air raid shelters 3.8 million people (71% of the population). The shelter is designed to protect the population in case of threat of gas or poison leakage, armed attacks such as war, radioactive dropping or the like. Private homes rarely have any, but houses over 600 sq.m. are required to build them. [33] Firefighters check shelters every ten years and deficiencies need to be fixed or corrected as soon as possible. Shelters are often used as warehouses, but the law requires residents of apartment blocks to be able to clear shelters and put them into operation in less than 72 hours. Half of the air shelter should be ready for use in two hours. The types of shelters are: K, a small shelter for a small house. S1, a simple shelter for an apartment house. S3, light shelter in a solid rock or heavyweight ferroconcreting. S6, large shelters in hard rock, which must be able to withstand 6 bar pressure wave. All shelters must have: an electrical and manually controlled air conditioning system that can protect against biological and chemical weapons and radioactive particles. radiometer dry toilets with fixed line interface spare output water tanks and first aid kit in Singapore since 1998, Singapore requires all new houses and apartments to have shelter built according to certain specifications. Singapore's Civil Protection Force streamlined the construction of such shelters in tall buildings, noting that the weapons effects tend to be localized and are unlikely to cause an entire building to collapse. [34] Taiwan currently has 117,669 air raid shelters in Taiwan. [35] Gallery Three Anderson, standing intact amid a scene of debris at Norwich A Morrison shelter containing a dummy after the house was demolished as a test child outside an air raid shelter in Gresford, a 1939 Air-shelter raid in Tamayama, Nagasaki Blast valves installed in the Bomb Shelter General Air Raid, located in a public garden in Holon , Israel Entrance into a public bomb shelter in Sderot , Israel Example of a bomb shelter at a playground in Israel See also Air Raid measures in the UK Blast Shelter Fallout Sanctuary Underground Live References ^ b d e Baker 1978, p. [necessary page]. In early 2015, Urban75.org. Retrieved 2010-06-24. In early 2015, archive of the original of 11 December 2011. Retrieved August 1, 2014. They are 1000000000000000000000000000 7grad.org. Retrieved 2010-06-24. ^ Berlin hochbunker, etc. Archive on May 5, 2004, in the guidance machine 2009-10-24. Wilkinson's Lemonade Factory in 2004. BBC News. 2003-04-21. 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