Air Quality

- Mapping Duct Layouts for Cleaner Airflow in Mobile Homes
  Mapping Duct Layouts for Cleaner Airflow in Mobile Homes Inspecting Vent Connections for Improved Air Quality Minimizing Drafts Through Sealed Mobile Home Duct Systems Scheduling Regular Cleanings for Mobile Home Ventilation Evaluating Filter Efficiency for Enhanced Mobile Home Air Quality Addressing Mold Risks in Mobile Home Ductwork Installing Air Purification Systems in Mobile Homes Checking Air Pressure to Reduce Allergens in Mobile Home Interiors Identifying Common Leaks in Flexible Mobile Home Ducts Balancing Humidity Levels for Healthier Mobile Home Air Considering UV Technology for Mobile Home Air Treatment Using Diagnostic Tools to Assess Air Quality in Mobile Homes
- Preparing Mobile Home HVAC Units for Intense Summer Heat
  Preparing Mobile Home HVAC Units for Intense Summer Heat Protecting Mobile Home Furnaces During Low Temperature Periods Coping with Storm Related Damage to Mobile Home Air Conditioners Adjusting Climate Control in Mobile Homes for Coastal Humidity Handling Power Outages in Mobile Home Heating Systems Planning Winterization Steps for Mobile Home HVAC Equipment Adapting Mobile Homes to Rapid Seasonal Swings in Temperature Evaluating Wind Exposure Factors for Mobile Home AC Placement Addressing Extended Rainy Periods in Mobile Home Ventilation Considering Local Building Codes for Mobile Home Climate Adaptations Balancing Heat Needs in Mobile Homes Across Different Regions Checking Insurance Coverage for Storm Damaged Mobile Home AC Units
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Evaluating Filter Efficiency for Enhanced Mobile Home Air Quality

Importance of Efficient Duct Layouts for Airflow

The importance of efficient HVAC systems in mobile homes cannot be overstated, particularly when considering the evaluation of filter efficiency for enhanced air quality. Mobile homes, often compact and tightly constructed, present unique challenges and opportunities for maintaining optimal indoor air quality. An efficient HVAC system is not only crucial for regulating temperature but also plays a pivotal role in ensuring that the air circulating within these homes is clean and healthy.

Unlike traditional houses, mobile homes tend to have less natural ventilation due to their construction and design. This means that the reliance on mechanical ventilation systems such as HVAC is significantly increased. Refrigerant levels should be checked regularly in mobile home systems **mobile home hvac** pump. The efficiency of these systems directly impacts the quality of life for residents by controlling humidity levels, reducing pollutants, and providing a consistent flow of fresh air.

One of the key components in maintaining an efficient HVAC system is evaluating filter efficiency. Filters are tasked with trapping dust, allergens, and other airborne particulates that can compromise air quality and trigger health issues such as allergies or respiratory problems. By using high-efficiency filters, mobile home owners can ensure that their living environment remains free from harmful contaminants.

Moreover, efficient filters contribute to the overall performance of the HVAC system itself. When filters are clogged or inefficient, they force the system to work harder than necessary, leading to increased energy consumption and potential breakdowns. Regularly assessing filter efficiency not only promotes better air quality but also extends the lifespan of the HVAC system while reducing energy costs.

In conclusion, efficient HVAC systems are indispensable for maintaining superior air quality in mobile homes. By prioritizing regular evaluations of filter efficiency, homeowners can safeguard their health and enhance their comfort while simultaneously optimizing energy use. Given the specific needs associated with mobile home living environments, it becomes clear that investing time and resources into ensuring an effective HVAC system yields significant benefits-both immediate and long-term-for residents seeking a healthier indoor oasis.

Common Challenges in Mobile Home Ventilation —

In the pursuit of enhancing air quality within mobile homes, evaluating the efficiency of HVAC system filters is crucial. Mobile homes often present unique challenges for maintaining optimal indoor air quality due to their size and construction materials. Thus, understanding the types of filters used in these systems and how they contribute to improved air quality is essential.

The first type of filter commonly employed in mobile home HVAC systems is the fiberglass filter. These are typically the most economical option available and function by capturing large particles like dust and lint. While effective at basic filtration, fiberglass filters do not excel at trapping smaller particles such as pollen or mold spores, making them less ideal for those with allergies or respiratory issues who require a higher level of air cleanliness.

Pleated filters represent another category frequently found in mobile HVAC units. Constructed from polyester or cotton folds, these filters offer a larger surface area for trapping contaminants. Their design allows them to capture smaller particles compared to fiberglass filters, providing an enhanced level of filtration that can significantly improve indoor air quality.

High-Efficiency Particulate Air (HEPA) filters stand out as one of the most effective options on the market. Capable of capturing up to 99.97% of airborne particles as small as 0.3 microns, HEPA filters are highly efficient at removing allergens, bacteria, and even some viruses from the air. However, their superior performance comes with a trade-off- HEPA filters can be more expensive and may require modifications to existing HVAC systems due to their dense structure which can impede airflow if not properly accommodated.

Electrostatic filters present a technologically advanced solution by using static electricity to attract and capture particles as they pass through the filter media. These reusable options can provide high levels of filtration while also being environmentally friendly due to their washable nature. Nevertheless, their efficiency can diminish over time if not cleaned regularly.

When evaluating filter efficiency for a mobile home HVAC system, several factors must be considered beyond just particle capture rate: airflow resistance, compatibility with existing systems, maintenance requirements, and cost-effectiveness all play pivotal roles in determining the best fit for any given situation.

Ultimately, choosing the right type of filter involves balancing these considerations against personal health needs and budget constraints. For mobile homeowners seeking enhanced air quality, investing in higher-efficiency filters like pleated or HEPA options could result in significant long-term benefits for both health and comfort within their living spaces.

By carefully selecting appropriate HVAC system filters and understanding how each type contributes differently to overall air quality improvement efforts within mobile homes can lead us toward healthier environments where we breathe easier knowing our choices directly impact our well-being every day.

Posted by on

Techniques for Mapping Duct Layouts

In recent years, the focus on indoor air quality has surged as individuals become increasingly aware of the health implications associated with poor air environments. Mobile homes, often characterized by compact spaces and limited ventilation options, present unique challenges when it comes to maintaining clean and breathable air. At the heart of this concern is the efficiency of filters used in air purification systems. Evaluating filter efficiency is crucial for ensuring enhanced air quality within these mobile residences.

To begin with, understanding filter efficiency requires an exploration of several methods that assess how well a filter can capture airborne particles. One common approach is through laboratory testing, where filters are subjected to controlled conditions to determine their Minimum Efficiency Reporting Value (MERV). This standardized rating helps consumers identify filters that meet specific needs based on particle size retention capabilities. Filters with higher MERV ratings are typically more effective at capturing smaller particles, such as dust mites and pollen, which are prevalent in mobile home environments.

Another method for evaluating filter efficiency involves real-world performance tests. These tests simulate typical living conditions within mobile homes to observe how filters perform over time. Factors such as humidity levels, temperature fluctuations, and varying pollution sources are considered to provide a comprehensive assessment of a filter's effectiveness in everyday scenarios. Through these evaluations, manufacturers can refine their products to better suit the dynamic environments found in mobile homes.

Additionally, technological advancements have introduced innovative methods for assessing filter efficiency using digital sensors and monitoring systems. These tools offer real-time data on air quality metrics like particulate matter concentration and volatile organic compounds (VOCs) levels. By integrating these technologies into mobile home air systems, residents gain valuable insights into their indoor environment's cleanliness, allowing them to make informed decisions about filter maintenance or upgrades.

Moreover, consumer feedback plays an essential role in evaluating filter performance. User reviews and experiences provide practical perspectives on how well a particular filter meets its advertised claims under various conditions. This qualitative data complements quantitative assessments by highlighting potential areas for improvement or innovation in filtration technology.

In conclusion, enhancing mobile home air quality hinges significantly on selecting efficient filters that effectively remove harmful particles from the indoor atmosphere. Through laboratory evaluations, real-world testing scenarios, technological innovations, and consumer feedback analysis, we gain a holistic understanding of filter performance across different contexts. As our knowledge grows alongside technological advancements in this field-driven by increasing environmental awareness-we move closer toward achieving optimal indoor air quality standards within all living spaces including those unique settings offered by mobile homes.

Tools and Technologies for Accurate Duct Mapping

The impact of filter efficiency on overall air quality is a critical consideration, especially within the context of mobile homes, where space constraints and ventilation systems differ from traditional houses. As we evaluate filter efficiency for enhanced mobile home air quality, it becomes apparent that the choice of filtration technology can significantly influence both indoor air quality and the health of the occupants.

Mobile homes often face unique challenges in maintaining optimal air quality due to their compact size and construction materials. These structures may have limited ventilation options and are more prone to infiltration by outdoor pollutants. Consequently, the role of an effective air filtration system becomes paramount. Filter efficiency refers to the ability of a filter to capture airborne particles, including dust, pollen, mold spores, and other pollutants that can adversely affect respiratory health.

High-efficiency particulate air (HEPA) filters are renowned for their ability to trap up to 99.97% of particulates as small as 0.3 microns. For mobile homes situated in areas with high pollution levels or those housing individuals with allergies or asthma, HEPA filters can dramatically improve indoor air quality by reducing the concentration of harmful particles in the air.

However, while high-efficiency filters offer significant benefits, they also come with considerations that must be addressed in mobile home settings. For instance, these filters require more powerful fans to move air through them due to their dense structure. This could potentially lead to higher energy consumption or require modifications to existing HVAC systems within a mobile home.

Moreover, regular maintenance is essential for maintaining filter efficiency over time. Filters must be replaced periodically according to manufacturer recommendations; otherwise, they may become clogged and less effective at capturing pollutants. In a mobile home environment where occupants often seek cost-effective solutions, balancing between higher initial costs for efficient filters and long-term health benefits is crucial.

In conclusion, evaluating filter efficiency is integral when seeking enhanced air quality within mobile homes. By investing in efficient filtration systems like HEPA filters and ensuring proper maintenance practices are followed, occupants can enjoy cleaner indoor environments conducive to better health outcomes. The choice of filter impacts not only immediate comfort but also long-term wellbeing-a consideration that underscores its importance in achieving superior overall air quality in mobile living spaces.

Best Practices for Cleaner Airflow

In recent years, the focus on indoor air quality has become more prominent as people increasingly recognize its impact on health and well-being. Mobile homes, often perceived as less efficient in maintaining optimal air quality due to their unique structures and materials, present a specific challenge in this regard. Understanding how to enhance air quality within these spaces is crucial for ensuring the comfort and health of their inhabitants. One promising approach is through the evaluation and implementation of enhanced filters designed specifically for mobile homes. This essay explores several case studies highlighting the effectiveness of improved filters in elevating air quality within mobile homes.

The first case study focuses on a community in southern California where residents noticed frequent respiratory issues linked to poor indoor air quality. The community collaborated with environmental engineers to test various types of air filters, ranging from basic fiberglass models to advanced HEPA (High Efficiency Particulate Air) filters. Over six months, data was collected on particulate matter levels, resident health reports, and overall satisfaction with indoor environments. The results were telling: homes equipped with HEPA filters showed a dramatic decrease in airborne particulates by up to 70%. Residents reported fewer respiratory symptoms, such as coughing and sneezing, which they attributed directly to the cleaner air facilitated by these enhanced filters.

Another compelling case study took place in an area prone to seasonal wildfires–northern Arizona–where smoke poses a significant threat to indoor air quality. Mobile home residents here face unique challenges due to their typically smaller living spaces which can quickly become saturated with smoke particles during wildfire season. Researchers introduced activated carbon filters alongside traditional HEPA systems to tackle both particulate matter and volatile organic compounds (VOCs). This combination proved highly effective; not only did it reduce visible smoke infiltration by over 80%, but it also neutralized odors significantly better than standalone solutions. Residents expressed increased confidence in their home's ability to protect against outdoor pollution events.

A third study examined mobile homes located near industrial areas where chemical pollutants are prevalent. Here, researchers employed electrostatic precipitators (ESPs) alongside standard mechanical filtration methods. ESPs work by using an electric charge to remove particles from the air stream–an ideal solution given the high concentration of fine particulates originating from nearby factories. The integration of ESPs resulted in a notable reduction of ultrafine particles that are typically difficult for regular filters to capture. Residents experienced marked improvements in asthma symptoms and other respiratory conditions previously exacerbated by industrial emissions.

These case studies collectively underscore the importance of selecting appropriate filtration technologies tailored specifically for mobile homes' unique needs–a consideration that extends beyond simply opting for higher efficiency ratings commonly found in stationary dwellings. They demonstrate that while traditional filtering methods can provide some relief, innovative approaches like combining different types of filters or employing cutting-edge technologies such as ESPs can offer comprehensive solutions against diverse pollutants.

In conclusion, enhancing filter efficiency plays a pivotal role in improving air quality within mobile homes-a necessity given their structural vulnerabilities towards external pollutants and limited space ventilation options compared with traditional housing structures. Through careful evaluation and strategic implementation of advanced filtration systems like HEPA combined with activated carbon or electrostatic precipitators when needed based on local environmental threats-residents stand not only healthier lives but also enjoy greater peace-of-mind knowing they breathe cleaner safer indoors regardless external challenges faced outside home walls today tomorrow alike!

Case Studies of Improved Air Quality in Mobile Homes

In the quest to enhance air quality within mobile homes, selecting high-efficiency filters is paramount. Mobile homes, like any other living space, require a clean and healthy indoor environment to ensure the well-being of their occupants. However, they often face unique challenges such as limited space and varying ventilation systems. Thus, evaluating filter efficiency becomes a crucial step in maintaining optimal air quality.

When considering high-efficiency filters for mobile homes, one must first understand the rating system that categorizes these filters. The Minimum Efficiency Reporting Value (MERV) is the most commonly used standard, ranging from 1 to 20. Higher MERV ratings indicate a filter's ability to capture smaller particles. For residential settings like mobile homes, filters with MERV ratings between 8 and 13 are recommended for effectively trapping airborne pollutants such as dust mites, pollen, mold spores, and pet dander without overly restricting airflow.

Another important consideration is the specific needs of the household occupants. For example, if residents suffer from allergies or respiratory conditions, investing in a filter with a higher MERV rating may be beneficial despite its potential impact on airflow resistance. Alternatively, for households with pets or smokers, specialized filters designed to target odors and finer particles might enhance indoor air quality more effectively.

Moreover, it is essential to evaluate how frequently these filters need replacement based on their usage and environmental factors. A filter's lifespan can vary significantly; however, regular replacement every three months is typically recommended for maintaining peak performance. In areas with high pollution levels or during allergy seasons, more frequent changes may be necessary.

Energy consumption is another factor that should not be overlooked when selecting filters for mobile homes. Filters that excessively hinder airflow can increase energy costs by forcing HVAC systems to work harder than necessary. Therefore, balancing filtration efficiency with energy efficiency is crucial in making an informed decision.

Lastly, budget constraints often play a significant role in determining which filter to choose. While high-efficiency filters can initially seem costly compared to their less efficient counterparts, they tend to offer better long-term value through improved health outcomes and potentially lower maintenance costs related to HVAC units.

In conclusion, selecting high-efficiency filters for enhancing air quality in mobile homes requires careful consideration of various factors including MERV ratings suitable for residential use, specific household needs related to allergies or pets, frequency of replacement based on environmental conditions and usage patterns as well as balancing energy efficiency against filtration capabilities within budgetary constraints. By prioritizing these aspects during selection processes homeowners can create healthier living environments conducive not only towards physical wellbeing but also overall comfort inside their residences amidst external atmospheric challenges faced by modern urban lifestyles today .

About Sick building syndrome

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Sick building syndrome	
Specialty	Environmental medicine, immunology Image not found or type unknown Edit this on Wikidata

Sick building syndrome (**SBS**) is a condition in which people develop symptoms of illness or become infected with chronic disease from the building in which they work or reside.[1] In scientific literature, SBS is also known as **building-related illness (BRI)**, **building-related symptoms (BRS)**, or **idiopathic environmental intolerance (IEI)**.

The main identifying observation is an increased incidence of complaints of such symptoms as headache, eye, nose, and throat irritation, fatigue, dizziness, and nausea.

The 1989 Oxford English Dictionary defines SBS in that way.[2] The World Health Organization created a 484-page tome on indoor air quality 1984, when SBS was attributed only to non-organic causes, and suggested that the book might form a basis for legislation or litigation.[3]

The outbreaks may or may not be a direct result of inadequate or inappropriate cleaning.[2] SBS has also been used to describe staff concerns in post-war buildings with faulty building aerodynamics, construction materials, construction process, and maintenance.[2] Some symptoms tend to increase in severity with the time people spend in the building, often improving or even disappearing when people are away from the building.[2][4] The term *SBS* is also used interchangeably with "**building-related symptoms**", which orients the name of the condition around patients' symptoms rather than a "sick" building.[5]

Attempts have been made to connect sick building syndrome to various causes, such as contaminants produced by outgassing of some building materials, volatile organic compounds (VOC), improper exhaust ventilation of ozone (produced by the operation of some office machines), light industrial chemicals used within, and insufficient fresh-air intake or air filtration (*see* "Minimum efficiency reporting value").[2] Sick building syndrome has also been attributed to heating, ventilation, and air conditioning (HVAC) systems, an attribution about which there are inconsistent findings.[6]

Signs and symptoms

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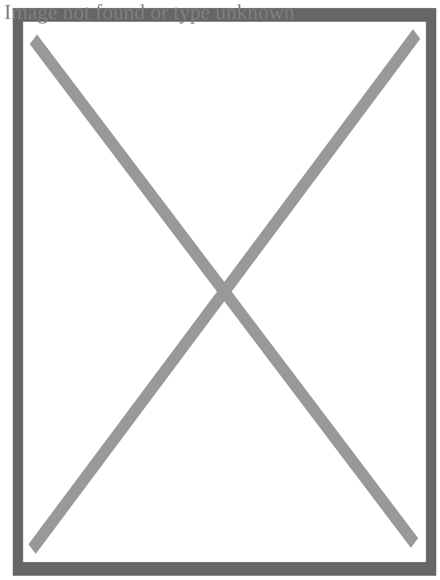

An air quality monitor

Human exposure to aerosols has a variety of adverse health effects.[7] Building occupants complain of symptoms such as sensory irritation of the eyes, nose, or throat; neurotoxic or general health problems; skin irritation; nonspecific hypersensitivity reactions; infectious diseases;[8] and odor and taste sensations.[9] Poor lighting has caused general malaise.[10]

Extrinsic allergic alveolitis has been associated with the presence of fungi and bacteria in the moist air of residential houses and commercial offices.[11] A study in 2017 correlated several inflammatory diseases of the respiratory tract with objective evidence of damp-caused damage in homes.[12]

The WHO has classified the reported symptoms into broad categories, including mucous-membrane irritation (eye, nose, and throat irritation), neurotoxic effects (headaches, fatigue, and irritability), asthma and asthma-like symptoms (chest tightness and wheezing), skin dryness and irritation, and gastrointestinal complaints.[13]

Several sick occupants may report individual symptoms that do not seem connected. The key to discovery is the increased incidence of illnesses in general with onset or exacerbation in a short period, usually weeks. In most cases, SBS symptoms are relieved soon after the occupants leave the particular room or zone.[14] However, there can be lingering effects of various neurotoxins, which may not clear up when the occupant leaves the building. In some cases, including those of sensitive people, there are long-term health effects.[15]

Cause

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ASHRAE has recognized that polluted urban air, designated within the United States Environmental Protection Agency (EPA)'s air quality ratings as unacceptable, requires the installation of treatment such as filtration for which the HVAC practitioners generally apply carbon-impregnated filters and their likes. Different toxins will aggravate the human body in different ways. Some people are more allergic to mold, while others are highly sensitive to dust. Inadequate ventilation will exaggerate small problems (such as deteriorating fiberglass insulation or cooking fumes) into a much more serious indoor air quality problem.[10]

Common products such as paint, insulation, rigid foam, particle board, plywood, duct liners, exhaust fumes and other chemical contaminants from indoor or outdoor sources, and biological contaminants can be trapped inside by the HVAC AC system. As this air is recycled using fan coils the overall oxygenation ratio drops and becomes harmful. When combined with other stress factors such as traffic noise and poor lighting, inhabitants of buildings located in a polluted urban area can quickly become ill as their immune system is overwhelmed.[10]

Certain VOCs, considered toxic chemical contaminants to humans, are used as adhesives in many common building construction products. These aromatic carbon rings / VOCs can cause acute and chronic health effects in the occupants of a building, including cancer, paralysis, lung failure, and others. Bacterial spores, fungal spores, mold spores, pollen, and viruses are types of biological contaminants and can all cause allergic reactions or illness described as SBS. In addition, pollution from outdoors, such as motor vehicle exhaust, can enter buildings, worsen indoor air quality, and increase the indoor concentration of carbon monoxide and carbon dioxide.[16] Adult SBS symptoms were associated with a history of allergic rhinitis, eczema and asthma.[17]

A 2015 study concerning the association of SBS and indoor air pollutants in office buildings in Iran found that, as carbon dioxide increased in a building, nausea, headaches, nasal irritation, dyspnea, and throat dryness also rose.[10] Some work conditions have been correlated with specific symptoms: brighter light, for example was significantly related to skin dryness, eye pain, and malaise.[10] Higher temperature is correlated with sneezing, skin redness, itchy eyes, and headache; lower relative humidity has been associated with sneezing, skin redness, and eye pain.[10]

In 1973, in response to the oil crisis and conservation concerns, ASHRAE Standards 62-73 and 62-81 reduced required ventilation from 10 cubic feet per minute (4.7 L/s) per person to 5 cubic feet per minute (2.4 L/s) per person, but this was found to be a contributing factor to sick building syndrome.[18] As of the 2016 revision, ASHRAE ventilation standards call for 5 to 10 cubic feet per minute of ventilation per occupant (depending on the occupancy type) in addition to ventilation based on the zone floor area delivered to the breathing zone.[19]

Workplace

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Excessive work stress or dissatisfaction, poor interpersonal relationships and poor communication are often seen to be associated with SBS, recent[*when?*] studies show that a combination of environmental sensitivity and stress can greatly contribute to sick building syndrome.[15][*citation needed*]

Greater effects were found with features of the psycho-social work environment including high job demands and low support. The report concluded that the physical environment of office buildings appears to be less important than features of the psycho-social work environment in explaining differences in the prevalence of symptoms. However, there is still a relationship between sick building syndrome and symptoms of workers regardless of workplace stress.[20]

Specific work-related stressors are related with specific SBS symptoms. Workload and work conflict are significantly associated with general symptoms (headache, abnormal tiredness, sensation of cold or nausea). While crowded workspaces and low work satisfaction are associated with upper respiratory symptoms.[21] Work productivity has been associated with ventilation rates, a contributing factor to SBS, and there's a significant increase in production as ventilation rates increase, by 1.7% for every two-fold increase of ventilation rate.[22] Printer effluent, released into the office air as ultra-fine particles (UFPs) as toner is burned during the printing process, may lead to certain SBS symptoms.[23][24] Printer effluent may contain a variety of toxins to which a subset of office workers are sensitive, triggering SBS symptoms.[25]

Specific careers are also associated with specific SBS symptoms. Transport, communication, healthcare, and social workers have highest prevalence of general symptoms. Skin symptoms such as eczema, itching, and rashes on hands and face are associated with technical work. Forestry, agriculture, and sales workers have the lowest rates of sick building syndrome symptoms.[26]

From the assessment done by Fisk and Mudarri, 21% of asthma cases in the United States were caused by wet environments with mold that exist in all indoor environments, such as schools, office buildings, houses and apartments. Fisk and Berkeley Laboratory colleagues also found that the exposure to the mold increases the chances of respiratory issues by 30 to 50 percent.[27] Additionally, studies showing that health effects with dampness and mold in indoor environments found that increased risk of adverse health effects occurs with dampness or visible mold environments.[28]

Milton et al. determined the cost of sick leave specific for one business was an estimated $480 per employee, and about five days of sick leave per year could be attributed to low ventilation rates. When comparing low ventilation rate areas of the building to higher ventilation rate areas, the relative risk of short-term sick leave was 1.53 times greater in the low ventilation areas.[29]

Home

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Sick building syndrome can be caused by one's home. Laminate flooring may release more SBS-causing chemicals than do stone, tile, and concrete floors.[17] Recent redecorating and new furnishings within the last year are associated with increased symptoms; so are dampness and related factors, having pets, and cockroaches.[17] Mosquitoes are related to more symptoms, but it is unclear whether the immediate cause of the symptoms is the mosquitoes or the repellents used against them.[17]

Mold

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Main article: Mold health issues

Sick building syndrome may be associated with indoor mold or mycotoxin contamination. However, the attribution of sick building syndrome to mold is controversial and supported by little evidence.[30][31][32]

Indoor temperature

[edit]
Main article: Room temperature § Health effects

Indoor temperature under 18 °C (64 °F) has been shown to be associated with increased respiratory and cardiovascular diseases, increased blood levels, and increased hospitalization.[33]

Diagnosis

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While sick building syndrome (SBS) encompasses a multitude of non-specific symptoms, building-related illness (BRI) comprises specific, diagnosable symptoms caused by certain agents (chemicals, bacteria, fungi, etc.). These can typically be identified, measured, and quantified.[34] There are usually four causal agents in BRi: immunologic, infectious, toxic, and irritant.[34] For instance, Legionnaire's disease, usually caused by *Legionella pneumophila*, involves a specific organism which could be ascertained through clinical findings as the source of contamination within a building.[34]

Prevention

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- Reduction of time spent in the building
- If living in the building, moving to a new place
- Fixing any deteriorated paint or concrete deterioration
- Regular inspections to indicate for presence of mold or other toxins
- Adequate maintenance of all building mechanical systems
- Toxin-absorbing plants, such as sansevieria[35][36][37][38][39][40][41][*excessive citations*]
- Roof shingle non-pressure cleaning for removal of algae, mold, and *Gloeocapsa magma*
- Using ozone to eliminate the many sources, such as VOCs, molds, mildews, bacteria, viruses, and even odors. However, numerous studies identify high-ozone shock treatment as ineffective despite commercial popularity and popular belief.
- Replacement of water-stained ceiling tiles and carpeting
- Only using paints, adhesives, solvents, and pesticides in well-ventilated areas or only using these pollutant sources during periods of non-occupancy
- Increasing the number of air exchanges; the American Society of Heating, Refrigeration and Air-Conditioning Engineers recommend a minimum of 8.4 air exchanges per 24-hour period
- Increased ventilation rates that are above the minimum guidelines[22]
- Proper and frequent maintenance of HVAC systems
- UV-C light in the HVAC plenum
- Installation of HVAC air cleaning systems or devices to remove VOCs and bioeffluents (people odors)
- Central vacuums that completely remove <u>all</u> particles from the house including the ultrafine particles (UFPs) which are less than 0.1 µm
- Regular vacuuming with a HEPA filter vacuum cleaner to collect and retain 99.97% of particles down to and including 0.3 micrometers
- Placing bedding in sunshine, which is related to a study done in a high-humidity area where damp bedding was common and associated with SBS[17]
- Lighting in the workplace should be designed to give individuals control, and be natural when possible[42]
- Relocating office printers outside the air conditioning boundary, perhaps to another building
- Replacing current office printers with lower emission rate printers[43]
- Identification and removal of products containing harmful ingredients

Management

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SBS, as a non-specific blanket term, does not have any specific cause or cure. Any known cure would be associated with the specific eventual disease that was cause by exposure to known contaminants. In all cases, alleviation consists of removing the affected person from the building associated. BRI, on the other hand, utilizes treatment appropriate for the contaminant identified within the building (e.g., antibiotics for Legionnaire's disease).[*citation needed*]

Improving the indoor air quality (IAQ) of a particular building can attenuate, or even eliminate, the continued exposure to toxins. However, a Cochrane review of 12 mold and dampness remediation studies in private homes, workplaces and schools by two independent authors were deemed to be very low to moderate quality of evidence in reducing adult asthma symptoms and results were inconsistent among children.[44] For the individual, the recovery may be a process involved with targeting the acute symptoms of a specific illness, as in the case of mold toxins.[45] Treating various building-related illnesses is vital to the overall understanding of SBS. Careful analysis by certified building professionals and physicians can help to identify the exact cause of the BRI, and help to illustrate a causal path to infection. With this knowledge one can, theoretically, remediate a building of contaminants and rebuild the structure with new materials. Office BRI may more likely than not be explained by three events: "Wide range in the threshold of response in any population (susceptibility), a spectrum of response to any given agent, or variability in exposure within large office buildings."[46]

Isolating any one of the three aspects of office BRI can be a great challenge, which is why those who find themselves with BRI should take three steps, history, examinations, and interventions. History describes the action of continually monitoring and recording the health of workers experiencing BRI, as well as obtaining records of previous building alterations or related activity. Examinations go hand in hand with monitoring employee health. This step is done by physically examining the entire workspace and evaluating possible threats to health status among employees. Interventions follow accordingly based on the results of the Examination and History report.[46]

Epidemiology

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Some studies have found that women have higher reports of SBS symptoms than men.[17][10] It is not entirely clear, however, if this is due to biological, social, or occupational factors.

A 2001 study published in the Journal Indoor Air, gathered 1464 office-working participants to increase the scientific understanding of gender differences under the Sick Building Syndrome phenomenon.[47] Using questionnaires, ergonomic investigations, building evaluations, as well as physical, biological, and chemical variables, the investigators obtained results that compare with past studies of SBS and gender. The study team found that across most test variables, prevalence rates were different in most areas, but there was also a deep stratification of working conditions between genders as well. For example, men's workplaces tend to be significantly larger and have all-around better job characteristics. Secondly, there was a noticeable difference in reporting rates, specifically that women have higher rates of reporting roughly 20% higher than men. This information was similar to that found in previous studies, thus indicating a potential difference in willingness to report.[47]

There might be a gender difference in reporting rates of sick building syndrome, because women tend to report more symptoms than men do. Along with this, some studies have found that women have a more responsive immune system and are more prone to mucosal dryness and facial erythema. Also, women are alleged by some to be more exposed to indoor environmental factors because they have a greater tendency to have clerical jobs, wherein they are exposed to unique office equipment and materials (example: blueprint machines, toner-based printers), whereas men often have jobs based outside of offices.[48]

History

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In the late 1970s, it was noted that nonspecific symptoms were reported by tenants in newly constructed homes, offices, and nurseries. In media it was called "office illness". The term "sick building syndrome" was coined by the WHO in 1986, when they also estimated that 10–30% of newly built office buildings in the West had indoor air problems. Early Danish and British studies reported symptoms.

Poor indoor environments attracted attention. The Swedish allergy study (SOU 1989:76) designated "sick building" as a cause of the allergy epidemic as was feared. In the 1990s, therefore, extensive research into "sick building" was carried out. Various physical and chemical factors in the buildings were examined on a broad front.

The problem was highlighted increasingly in media and was described as a "ticking time bomb". Many studies were performed in individual buildings.

In the 1990s "sick buildings" were contrasted against "healthy buildings". The chemical contents of building materials were highlighted. Many building material manufacturers were actively working to gain control of the chemical content and to replace criticized additives. The ventilation industry advocated above all more well-functioning ventilation. Others perceived ecological construction, natural materials, and simple techniques as a solution.

At the end of the 1990s came an increased distrust of the concept of "sick building". A dissertation at the Karolinska Institute in Stockholm 1999 questioned the methodology of previous research, and a Danish study from 2005 showed these flaws experimentally. It was suggested that sick building syndrome was not really a coherent syndrome and was not a disease to be individually diagnosed, but a collection of as many as a dozen semi-related diseases. In 2006 the Swedish National Board of Health and Welfare recommended in the medical journal *Läkartidningen* that "sick building syndrome" should not be used as a clinical diagnosis. Thereafter, it has become increasingly less common to use terms such as *sick buildings* and *sick building syndrome* in research.

However, the concept remains alive in popular culture and is used to designate the set of symptoms related to poor home or work environment engineering. *Sick building* is therefore an expression used especially in the context of workplace health.

Sick building syndrome made a rapid journey from media to courtroom where professional engineers and architects became named defendants and were represented by their respective professional practice insurers. Proceedings invariably relied on expert witnesses, medical and technical experts along with building managers, contractors and manufacturers of finishes and furnishings, testifying as to cause and effect. Most of these actions resulted in sealed settlement agreements, none of these being dramatic. The insurers needed a defense based upon Standards of Professional Practice to meet a court decision that declared that in a modern, essentially sealed building, the HVAC systems must produce breathing air for suitable human consumption. ASHRAE (American Society of Heating, Refrigeration and Air Conditioning Engineers, currently with over 50,000 international members) undertook the task of codifying its indoor air quality (IAQ) standard.

ASHRAE empirical research determined that "acceptability" was a function of outdoor (fresh air) ventilation rate and used carbon dioxide as an accurate measurement of occupant presence and activity. Building odors and contaminants would be suitably controlled by this dilution methodology. ASHRAE codified a level of 1,000 ppm of carbon dioxide and specified the use of widely available sense-and-control equipment to assure compliance. The 1989 issue of ASHRAE 62.1-1989 published the whys and wherefores and overrode the 1981 requirements that were aimed at a ventilation level of 5,000 ppm of carbon dioxide (the OSHA workplace limit), federally set to minimize HVAC system energy consumption. This apparently ended the SBS epidemic.

Over time, building materials changed with respect to emissions potential. Smoking vanished and dramatic improvements in ambient air quality, coupled with code compliant ventilation and maintenance, per ASHRAE standards have all contributed to the acceptability of the indoor air environment.[49][50]

See also

[edit]

- Aerotoxic syndrome
- Air purifier
- Asthmagen
- Cleanroom
- Electromagnetic hypersensitivity
- Havana syndrome
- Healthy building
- Indoor air quality
- Lead paint
- Multiple chemical sensitivity
- NASA Clean Air Study
- Nosocomial infection
- Particulates
- Power tools
- Renovation
- Somatization disorder
- Fan death

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Environment Quality on Sick Building Syndrome in Indian Leed Certified Buildings". by Jagannathan Mohan

External links

[edit]

- Best Practices for Indoor Air Quality when Remodeling Your Home, US EPA
- Renovation and Repair, Part of Indoor Air Quality Design Tools for Schools, US EPA
- Addressing Indoor Environmental Concerns During Remodeling, US EPA
- Dust FAQs, UK HSE Archived 2023-03-20 at the Wayback Machine
- CCOHS: Welding - Fumes And Gases | Health Effect of Welding Fumes

Classification	◦ **MeSH**: D018877	D
External resources	◦ **Patient UK**: Sick building syndrome	

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Heading, ventilation, and air conditioning

Fundamental concepts	◦ Air changes per hour ◦ Bake-out ◦ Building envelope ◦ Convection ◦ Dilution ◦ Domestic energy consumption ◦ Enthalpy ◦ Fluid dynamics ◦ Gas compressor ◦ Heat pump and refrigeration cycle ◦ Heat transfer ◦ Humidity ◦ Infiltration ◦ Latent heat ◦ Noise control ◦ Outgassing ◦ Particulates ◦ Psychrometrics ◦ Sensible heat ◦ Stack effect ◦ Thermal comfort ◦ Thermal destratification ◦ Thermal mass ◦ Thermodynamics ◦ Vapour pressure of water

Technology

- Absorption-compression heat pump
- Absorption refrigerator
- Air barrier
- Air conditioning
- Antifreeze
- Automobile air conditioning
- Autonomous building
- Building insulation materials
- Central heating
- Central solar heating
- Chilled beam
- Chilled water
- Constant air volume (CAV)
- Coolant
- Cross ventilation
- Dedicated outdoor air system (DOAS)
- Deep water source cooling
- Demand controlled ventilation (DCV)
- Displacement ventilation
- District cooling
- District heating
- Electric heating
- Energy recovery ventilation (ERV)
- Firestop
- Forced-air
- Forced-air gas
- Free cooling
- Heat recovery ventilation (HRV)
- Hybrid heat
- Hydronics
- Ice storage air conditioning
- Kitchen ventilation
- Mixed-mode ventilation
- Microgeneration
- Passive cooling
- Passive daytime radiative cooling
- Passive house

- Air conditioner inverter
- Air door
- Air filter
- Air handler
- Air ionizer
- Air-mixing plenum
- Air purifier
- Air source heat pump
- Attic fan
- Automatic balancing valve
- Back boiler
- Barrier pipe
- Blast damper
- Boiler
- Centrifugal fan
- Ceramic heater
- Chiller
- Condensate pump
- Condenser
- Condensing boiler
- Convection heater
- Compressor
- Cooling tower
- Damper
- Dehumidifier
- Duct
- Economizer
- Electrostatic precipitator
- Evaporative cooler
- Evaporator
- Exhaust hood
- Expansion tank
- Fan
- Fan coil unit
- Fan filter unit
- Fan heater
- Fire damper

Measurement and control	◦ Air flow meter ◦ Aquastat ◦ BACnet ◦ Blower door ◦ Building automation ◦ Carbon dioxide sensor ◦ Clean air delivery rate (CADR) ◦ Control valve ◦ Gas detector ◦ Home energy monitor ◦ Humidistat ◦ HVAC control system ◦ Infrared thermometer ◦ Intelligent buildings ◦ LonWorks ◦ Minimum efficiency reporting value (MERV) ◦ Normal temperature and pressure (NTP) ◦ OpenTherm ◦ Programmable communicating thermostat ◦ Programmable thermostat ◦ Psychrometrics ◦ Room temperature ◦ Smart thermostat ◦ Standard temperature and pressure (STP) ◦ Thermographic camera ◦ Thermostat ◦ Thermostatic radiator valve

Professions, trades, and services	◦ Architectural acoustics ◦ Architectural engineering ◦ Architectural technologist ◦ Building services engineering ◦ Building information modeling (BIM) ◦ Deep energy retrofit ◦ Duct cleaning ◦ Duct leakage testing ◦ Environmental engineering ◦ Hydronic balancing ◦ Kitchen exhaust cleaning ◦ Mechanical engineering ◦ Mechanical, electrical, and plumbing ◦ Mold growth, assessment, and remediation ◦ Refrigerant reclamation ◦ Testing, adjusting, balancing
Industry organizations	◦ AHRI ◦ AMCA ◦ ASHRAE ◦ ASTM International ◦ BRE ◦ BSRIA ◦ CIBSE ◦ Institute of Refrigeration ◦ IIR ◦ LEED ◦ SMACNA ◦ UMC
Health and safety	◦ Indoor air quality (IAQ) ◦ Passive smoking ◦ Sick building syndrome (SBS) ◦ Volatile organic compound (VOC)

See also

- ASHRAE Handbook
- Building science
- Fireproofing
- Glossary of HVAC terms
- Warm Spaces
- World Refrigeration Day
- Template:Home automation
- Template:Solar energy

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Employment

Classifications

- Academic tenure
- Casual
- Contingent work
- Full-time job
- Gig worker
- Job sharing
- Part-time job
- Self-employment
- Side job
- Skilled worker
  - Journeyman
  - Technician
  - Tradesperson
- Independent contractor
- Labour hire
- Temporary work
- Laborer
- Wage labour

Hiring

- Application
- Background check
- Business networking
- Cover letter
- Curriculum vitae
- Drug testing
- Employment contract
- Employment counsellor
- Executive search
    - list
- Induction programme
- Job fair
- Job fraud
- Job hunting
- Job interview
- Letter of recommendation
- Onboarding
- Overqualification
- Person–environment fit
- Personality–job fit theory
- Personality hire
- Probation
- Realistic job preview
- Recruitment
- Résumé
- Simultaneous recruiting of new graduates
- Underemployment
- Work-at-home scheme

Roles	◦ Cooperative ◦ Employee ◦ Employer ◦ Internship ◦ Job ◦ Labour hire ◦ Permanent employment ◦ Supervisor ◦ Volunteering
Working class	◦ Blue-collar ◦ Green-collar ◦ Grey-collar ◦ Pink-collar ◦ Precariat ◦ White-collar ◦ Red-collar ◦ New-collar ◦ No-collar ◦ Orange-collar ◦ Scarlet-collar ◦ Black-collar ◦ Gold-collar

Career and training

- Apprenticeship
- Artisan
  - Master craftsman
- Avocation
- Career assessment
- Career counseling
- Career development
- Coaching
- Creative class
- Education
  - Continuing education
  - E-learning
  - Employability
  - Further education
  - Graduate school
  - Induction training
  - Knowledge worker
  - Licensure
  - Lifelong learning
  - Overspecialization
  - Practice-based professional learning
  - Professional association
  - Professional certification
  - Professional development
  - Professional school
  - Reflective practice
  - Retraining
  - Vocational education
  - Vocational school
  - Vocational university
- Mentorship
- Occupational Outlook Handbook
- Practice firm
- Profession
  - Operator
  - Professional
- Tradesman

Attendance	◦ Break ◦ Break room ◦ Career break ◦ Furlough ◦ Gap year ◦ Leave of absence ◦ Long service leave ◦ No call, no show ◦ Sabbatical ◦ Sick leave ◦ Time clock
Schedules	◦ 35-hour workweek ◦ Four-day week ◦ Eight-hour day ◦ 996 working hour system ◦ Flextime ◦ On-call ◦ Overtime ◦ Remote work ◦ Six-hour day ◦ Shift work ◦ Working time ◦ Workweek and weekend

Wages and salaries	◦ Income bracket
	◦ Income tax
	◦ Living wage
	◦ Maximum wage
	◦ National average salary
	    ◦ World
	    ◦ Europe
	◦ Minimum wage
	    ◦ Canada
	    ◦ Hong Kong
	    ◦ Europe
	    ◦ United States
	◦ Progressive wage
	    ◦ Singapore
	◦ Overtime rate
	◦ Paid time off
	◦ Performance-related pay
	◦ Salary cap
	◦ Wage compression
	◦ Working poor

Benefits	◦ Annual leave ◦ Casual Friday ◦ Child care ◦ Disability insurance ◦ Health insurance ◦ Life insurance ◦ Marriage leave ◦ Parental leave ◦ Pension ◦ Sick leave ◦ United States ◦ Take-home vehicle

Safety and health	◦ Crunch
	◦ Epilepsy and employment
	◦ Human factors and ergonomics
	◦ Karoshi
	◦ List of countries by rate of fatal workplace accidents
	◦ Occupational burnout
	◦ Occupational disease
	◦ Occupational exposure limit
	◦ Occupational health psychology
	◦ Occupational injury
	◦ Occupational noise
	◦ Occupational stress
	◦ Personal protective equipment
	◦ Repetitive strain injury
	◦ Right to sit
	    ◦ United States
	◦ Sick building syndrome
	◦ Work accident
	    ◦ Occupational fatality
	◦ Workers' compensation
	◦ Workers' right to access the toilet
	◦ Workplace health promotion
	◦ Workplace phobia
	◦ Workplace wellness

Equal opportunity	◦ Affirmative action ◦ Equal pay for equal work ◦ Gender pay gap ◦ Glass ceiling

Infractions

- Corporate collapses and scandals
  - Accounting scandals
  - Control fraud
  - Corporate behaviour
  - Corporate crime
- Discrimination
- Exploitation of labour
- Dress code
- Employee handbook
- Employee monitoring
- Evaluation
- Labour law
- Sexual harassment
- Sleeping while on duty
- Wage theft
- Whistleblower
- Workplace bullying
- Workplace harassment
- Workplace incivility

Willingness

- Boreout
- Careerism
- Civil conscription
- Conscription
- Critique of work
- Dead-end job
- Job satisfaction
- McJob
- Organizational commitment
- Refusal of work
- Slavery
  - Bonded labour
  - Human trafficking
  - Labour camp
  - Penal labour
  - Peonage
  - Truck wages
  - Unfree labour
  - Wage slavery
- Work ethic
- Work–life interface
  - Downshifting
  - Slow living
- Workaholic

Termination	◦ At-will employment
	◦ Dismissal
	    ◦ Banishment room
	    ◦ Constructive dismissal
	    ◦ Wrongful dismissal
	◦ Employee offboarding
	◦ Exit interview
	◦ Layoff
	◦ Notice period
	◦ Pink slip
	◦ Resignation
	    ◦ Letter of resignation
	◦ Restructuring
	◦ Retirement
	    ◦ Mandatory retirement
	    ◦ Retirement age
	    ◦ Retirement planning
	◦ Severance package
	    ◦ Golden handshake
	    ◦ Golden parachute
	◦ Turnover

Unemployment

- Barriers to entry
- Discouraged worker
- Economic depression
  - Great Depression
  - Long Depression
- Frictional unemployment
- Full employment
- Graduate unemployment
- Involuntary unemployment
- Jobless recovery
- Phillips curve
- Recession
  - Great Recession
  - Job losses caused by the Great Recession
  - Lists of recessions
  - Recession-proof job
- Reserve army of labour
- Structural unemployment
- Technological unemployment
- Types of unemployment
- Unemployment benefits
- Unemployment Convention, 1919
- Unemployment extension
- List of countries by unemployment rate
- Employment-to-population ratio
  - List
- Wage curve
- Youth unemployment

Public programs

- Workfare
- Unemployment insurance
- Make-work job
- Job creation program
- Job creation index
- Job guarantee
- Employer of last resort
- Guaranteed minimum income
- Right to work
- *Historical:*
- *U.S.A.:*
- Civil Works Administration
- Works Progress Administration

Comprehensive Employment and Training Act

See also

- Bullshit job
- Busy work
- Credentialism and educational inflation
- Emotional labor
- Evil corporation
- Going postal
- Kiss up kick down
- Labor rights
- Make-work job
- Narcissism in the workplace
- Post-work society
- Presenteeism
- Psychopathy in the workplace
- Sunday scaries
- Slow movement (culture)
- Toxic leader
- Toxic workplace
- Workhouse

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- Aspects of corporations
- Aspects of jobs
- Aspects of occupations
- Aspects of organizations
- Aspects of workplaces
- Corporate titles
- Critique of work
- Organized labor

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- Japan
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About Manufactured housing

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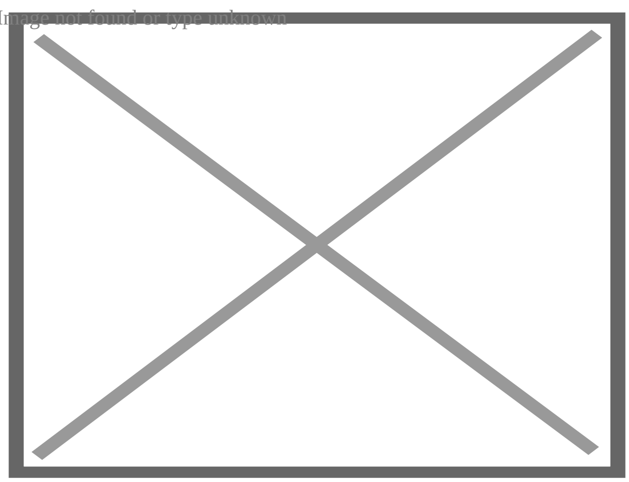


A modern "triple wide" home

Manufactured housing (commonly known as mobile homes in the United States) is a type of prefabricated housing that is largely assembled in factories and then transported to sites of use. The definition of the term in the United States is regulated by federal law (Code of Federal Regulations, 24 CFR 3280): "Manufactured homes are built as dwelling units of at least 320 square feet (30 m^2) in size with a permanent chassis to assure the initial and continued transportability of the home."[1] The requirement to have a wheeled chassis permanently attached differentiates "manufactured housing" from other types of prefabricated homes, such as modular homes.

United States

[edit]

Definition

[edit]

According to the Manufactured Housing Institute's National Communities Council (MHINCC), *manufactured homes*[2]

> are homes built entirely in the factory under a federal building code administered by the U.S. Department of Housing and Urban Development (HUD). The Federal Manufactured Home Construction and Safety Standards (commonly known as the HUD Code) went into effect June 15, 1976. Manufactured homes may be single- or multi-section and are transported to the site and installed.

The MHINCC distinguishes among several types of *factory-built housing*: manufactured homes, modular homes, panelized homes, pre-cut homes, and mobile homes.

From the same source, *mobile home* "is the term used for manufactured homes produced prior to June 15, 1976, when the HUD Code went into effect."[2] Despite the formal definition, *mobile home* and *trailer* are still common terms in the United States for this type of housing.

History

[edit]

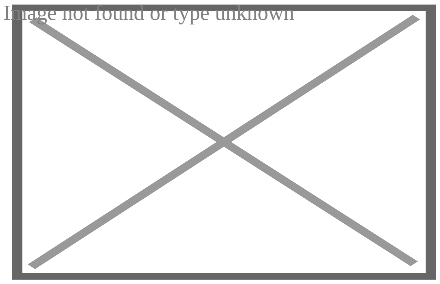
The original focus of this form of housing was its ability to relocate easily. Units were initially marketed primarily to people whose lifestyle required mobility. However, beginning in the 1950s, these homes began to be marketed primarily as an inexpensive form of housing designed to be set up and left in a location for long periods of time, or even permanently installed with a masonry foundation. Previously, units had been eight feet or less in width, but in 1956, the 10-foot (3.0 m) wide home was introduced. This helped solidify the line between mobile and house/travel trailers, since the smaller units could be moved simply with an automobile, but the larger, wider units required the services of a professional trucking company. In the 1960s and '70s, the homes became even longer and wider, making the mobility of the units more difficult. Today, when a factory-built home is moved to a location, it is usually kept there permanently. The mobility of the units has decreased considerably.

The factory-built homes of the past developed a negative stereotype because of their lower cost and the tendency for their value to depreciate more quickly than site-built homes. The tendency of these homes to rapidly depreciate in resale value made using them as collateral for loans far riskier than traditional home loans. Loan terms were usually limited to less than the 30-year term typical of the general home-loan market, and interest rates were considerably higher. In other words, these home loans resembled motor vehicle loans far more than traditional home mortgages. They have been consistently linked to lower-income families, which has led to prejudice and zoning restrictions, which include limitations on the number and density of homes permitted on any given site, minimum size requirements, limitations on exterior colors and finishes, and foundation mandates.

Many jurisdictions do not allow the placement of any additional factory-built homes, while others have strongly limited or forbidden all single-wide models, which tend to depreciate more rapidly than modern double-wide models. The derogatory concept of a "trailer park" is typically older single-wide homes occupying small, rented lots and remaining on wheels, even if the home stays in place for decades.

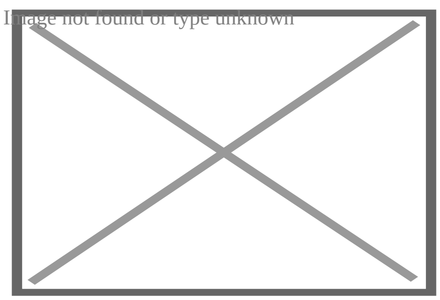
Modern manufactured homes

[edit]

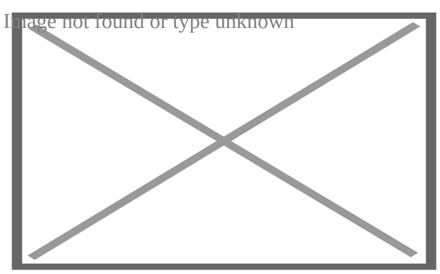


A manufactured house ready to be assembled in Grass Valley, California

Modern homes, especially modular homes, belie this image and can be identical in appearance to site-built homes. Newer homes, particularly double-wides, tend to be built to much higher standards than their predecessors. This has led to a reduction in the rate of value depreciation of many used units.



A manufactured house just before construction of its garage



Stick built garage being added to a new manufactured house

Although great strides have been made in terms of quality, manufactured homes do still struggle with construction problems. Author Wes Johnson has pointed out that the HUD code which governs manufactured homes desperately needs to be updated, quality control at manufacturing facilities are often lax, and set-up issues often compromise even a well-made manufactured home. Johnson states buyers need to be exceptionally cautious if they are entertaining the idea of purchasing any manufactured home by carefully checking it for defects before signing the contract and supervising the set-up process closely. These homes in the modern age are built to be beautiful and last longer than the typical old trailers.[*citation needed*]

When FEMA studied the destruction wrought by Hurricane Andrew in Dade County Florida, they concluded that modular and masonry homes fared best compared to other construction.[3]

High-performance manufactured housing

[edit]

While manufactured homes are considered to be affordable housing, older models can be some of the most expensive in the nation to heat due to energy inefficiency.[4] *High-performance manufactured housing* uses less energy and therefore increases life-cycle affordability by decreasing operating costs. High-performance housing is not only energy efficient, but also attractive, functional, water-efficient, resilient to wind, seismic forces, and moisture penetration, and has healthy indoor environmental quality. Achieving high-performance involves integrated, whole building design, involving many components, not one single technology. High–performance manufactured housing should also include energy efficient appliances, such as Energy Star qualified appliances.[4] Energy Star requires ample insulation: 2x6 walls: R21, roof: R40, floor: R33.

Difference from modular homes

[edit]

Both types of homes - manufactured and modular - are commonly referred to as factory-built housing, but they are not identical. Modular homes are built to International Residential Code (IRC) code. Modular homes can be transported on flatbed trucks rather than being towed, and can lack axles and an automotive-type frame. However, some modular houses are towed behind a semi-truck or toter on a frame similar to that of a trailer. The house is usually in two pieces and is hauled by two separate trucks. Each frame has five or more axles, depending on the size of the house. Once the house has reached its location, the axles and the tongue of the frame are then removed, and the house is set on a concrete foundation by a large crane. Some modern modular homes, once fully assembled, are indistinguishable from site-built homes. In addition, modular homes:

- must conform to the same local, state and regional building codes as homes built on-site;
- are treated the same by banks as homes built on-site. They are easily refinanced, for example;
- must be structurally approved by inspectors;
- can be of any size, although the block sections from which they are assembled are uniformly sized;[5][6]

Difference from IRC codes homes (site built)

[edit]

Manufactured homes have several standard requirements that are more stringent than International Residential Code homes.

Fire Protection

A National Fire Protection Association (NFPA) study from July 2011 shows that occurrence of fires is lower in manufactured housing and the injury rate is lower in manufactured housing. The justification behind the superior fire safety is due to the following higher standard requirements:

- The HUD standard requires a flame spread of 25 or less in water heater and furnace compartments.
- The HUD standard requires a flame spread of 50 or less on the wall behind the range.
- The HUD standard requires a flame spread of 75 or less on the ceilings.
- The HUD standard requires a flame spread of 25 or less to protect the bottoms and side of kitchen cabinets around the range.
- The HUD standard requires additional protection of cabinets above the range.

- The HUD standard requires trim larger than 6" to meet flame spread requirements.
- The HUD standard requires smoke detectors in the general living area.
- The HUD standard requires 2 exterior doors.
- The HUD standard requires bedroom doors to be within 35 feet of an exterior door.

Bay Area

[edit]

The San Francisco Bay Area, located in Northern California, is known for its high real estate prices, making manufactured housing an increasingly popular alternative to traditional real estate.[7] It is mainly the value of the land that makes real estate in this area so expensive. As of May 2011, the median price of a home in Santa Clara was $498,000,[8] while the most expensive manufactured home with all the premium features was only $249,000.[9] This drastic price difference is due to the fact that manufactured homes are typically placed in communities where individuals do not own the land, but instead pay a monthly site fee. This enables a consumer, who could otherwise not afford to live in the Bay Area, the opportunity to own a new home in this location. There are various communities of manufactured homes in the Bay Area, the largest being Casa de Amigos, located in Sunnyvale, California.

Bulk material storage

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  Bulk material storage
  Construction starts with the frame

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  Construction starts
  with the frame

Interior wall assemblies are attached

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  Interior wall assemblies
  are attached
  Exterior wall assemblies are set in place

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  Exterior wall assemblies
  are set in place
  Roof assembly is set atop the house

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  Roof assembly is set
  atop the house
  Drywall completed

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  House is ready for delivery to site

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  House is ready for
  delivery to site

Australia

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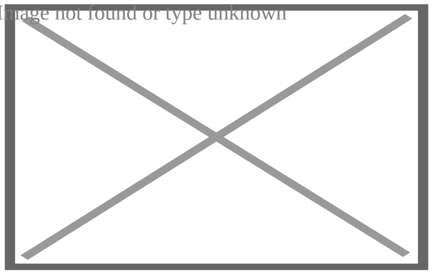

An Australian modern prefabricated house

In Australia these homes are commonly known as **transportable homes**, **relocatable homes** or **prefabricated homes** (not to be confused with the American meaning of the term). They are not as common as in the US, but the industry is expected to grow as this method of construction becomes more accepted.

Manufactured home parks refer to housing estates where the house owner rents the land instead of owning it. This is quite common in Queensland in both the form of tourist parks and over fifty estates. The term transportable homes tends to be used to refer to houses that are built on land that is owned by the house owner.[*citation needed*]

Typically the homes are built in regional areas where the cost of organizing tradespeople and materials is higher than in the cities. In particular prefabricated homes have been popular in mining towns or other towns experiencing demand for new housing in excess of what can be handled by local builders. This method of construction is governed by state construction legislation and is subject to local council approval and homeowners' warranty or home warranty insurance.

Construction process

[edit]

A manufactured home is built entirely inside a huge, climate-controlled factory by a team of craftsmen. The first step in the process is the flooring, which is built in sections, each attached to a permanent chassis with its own wheels and secured for transport upon the home's completion. Depending on the size of the house and the floorplan's layout, there may be two, three or even four sections. The flooring sections have heating, electrical and plumbing connections pre-installed before they are finished with laminate, tile or hardwood. Next, the walls are constructed on a flat level surface with insulation and interior Sheetrock before being lifted by crane into position and secured to the floor sections. The interior ceilings and roof struts are next, vapor sealed and secured to each section's wall frame before being shingled. Then, the exterior siding is added, along with the installation of doors and windows. Finally, interior finishing, such as sealing the drywall, is completed, along with fixture installation and finishing the electrical and plumbing connections. The exposed portions of each section, where they will eventually be joined together, are wrapped in plastic to protect them for transport.

With all the building site prep work completed, the building will be delivered by trucks towing the individual sections on their permanent chassis. The sections will be joined together securely, and all final plumbing and electrical connections are made before a decorative skirt or facade is applied to the bottom exterior of the house, hiding the chassis and finishing off the look of the home.

See also

[edit]

- Image not found or type unknown Housing portal
- Modular home
- Prefabrication
- Prefabricated home
- Reefer container housing units
- British post-war temporary prefab houses
- HUD USER
- Regulatory Barriers Clearinghouse
- Lustron house
- Cardinal Industries, Inc.
- Dymaxion house
- Excel Homes
- All American Homes
- All Parks Alliance for Change

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[edit]

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2. ^ ***a*** ***b*** "What is a Manufactured Home?" Manufactured Housing Institute's National Communities Council, accessed 6 July 2011 Archived 23 March 2012 at the Wayback Machine
3. **^** *"FIA 22, Mitigation Assessment Team Report: Hurricane Andrew in Florida (1993) - FEMA.gov". www.fema.gov.*
4. ^ ***a*** ***b*** *Environmental and Energy Study Institute. "Issue Brief: High-Performance Manufactured Housing". eesi.org. Retrieved August 2, 2011.*
5. **^** https://homenation.com/mobile-vs-modular/ Modular home vs Manufactured home
6. **^** Kit Homes Guide
7. **^** *"2011 Coldwell Banker U.S. Home Listing Report". Coldwell Banker. Retrieved 6 July 2011.*
8. **^** *"Bay Area May Home Sales, Median Price Inch Up From April; Fall below 2010". DataQuick. Retrieved 6 July 2011.*
9. **^** *"Sunnyvale Model Home". Alliance Manufactured Homes. Archived from the original on 18 July 2011. Retrieved 6 July 2011.*

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Streetwalker Tours

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Guthrie Green

4.7 (3055)

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Philbrook Museum of Art

4.8 (3790)

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Tulsa Botanic Garden

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OkieTundra

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Photo

The Tulsa Arts District

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Driving Directions From Reception Jehovah's Witnesses to Durham Supply Inc

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Driving Directions From Guthrie Green to Durham Supply Inc

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Reviews for Durham Supply Inc

Durham Supply Inc

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Ethel Schiller

(5)

This place is really neat, if they don't have it they can order it from another of their stores and have it there overnight in most cases. Even hard to find items for a trailer! I definitely recommend this place to everyone! O and the prices is awesome too!

Durham Supply Inc

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Gerald Clifford Brewster

(5)

We will see, the storm door I bought says on the tag it's 36x80, but it's 34x80. If they return it.......they had no problems returning it. And it was no fault of there's, you measure a mobile home door different than a standard door!

Durham Supply Inc

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Ty Spears

(5)

Bought a door/storm door combo. Turns out it was the wrong size. They swapped it out, quick and easy no problems. Very helpful in explaining the size differences from standard door sizes.

Durham Supply Inc

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B Mann

(5)

I was in need of some items for a double wide that I am remodeling and this place is the only place in town that had what I needed (I didn't even try the other rude place)while I was there I learned the other place that was in Tulsa that also sold mobile home supplies went out of business (no wonder the last time I was in there they were VERY RUDE and high priced) I like the way Dunham does business they answered all my questions and got me the supplies I needed, very friendly, I will be back to purchase the rest of my items when the time comes.

Durham Supply Inc

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Dennis Champion

(5)

Durham supply and Royal supply seems to find the most helpful and friendly people to work in their stores, we are based out of Kansas City out here for a few remodels and these guys treated us like we've gone there for years.

Evaluating Filter Efficiency for Enhanced Mobile Home Air Quality**View GBP**

Frequently Asked Questions

What factors should be considered when selecting an HVAC filter for improved air quality in a mobile home?

Key factors include the filters MERV (Minimum Efficiency Reporting Value) rating, which indicates its ability to trap particles; compatibility with the existing HVAC system; airflow resistance; and specific needs such as allergy reduction or pet dander control.

How does the MERV rating impact air quality and system performance in a mobile home?

A higher MERV rating means better filtration of smaller particles, improving air quality by capturing dust, allergens, and pollutants. However, filters with very high MERV ratings can restrict airflow if not compatible with the system, potentially reducing HVAC efficiency.

Why is regular maintenance important for maintaining filter efficiency in mobile homes?

Regular maintenance ensures that filters remain free from clogs and obstructions, allowing optimal airflow. This prevents strain on the HVAC system, maintains energy efficiency, and consistently improves indoor air quality.

How often should filters be replaced in a mobile homes HVAC system to maintain optimal indoor air quality?

Filters should typically be checked every 1-3 months. Replacement frequency depends on factors like usage patterns, presence of pets or smokers, local air pollution levels, and specific health concerns like allergies.

Are there specific types of filters recommended for addressing common indoor air pollutants found in mobile homes?

Yes, HEPA filters are effective against fine particulates like pollen and dust mites; activated carbon filters help reduce odors and VOCs (volatile organic compounds); while electrostatic filters can capture both small particles and larger debris efficiently.

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