Smoke Free Housing
for
Owners, Landlords and Managers

OVERVIEW

Smoke Free policies are quickly becoming the standard for multi-unit housing in the U.S.[1] There are no federal or state laws that prohibit an owner from banning smoking in their buildings or on their properties. Smoke free-policies do not exclude a smoker from renting or require them to quit smoking; it only state that a smoker cannot smoke while on the property or can only smoke in designated areas.

It is legal to ban smoking?

- Smoking is not a legal right. Smoke free policies do not infringe on the legal rights of individuals.[4]
- Federal or state law does not restrict owners, landlords or managers from adopting "no smoking" policies. In fact, the US Department of Housing and Urban Development strongly encourages owners and managers to adopt smoke free policies for their properties.[5]
    - Owners who have HUD-assisted housing units that decide to make the smoke free policy a condition of the lease may need HUD approval of the lease change.
    - It is not necessary to seek HUD approval for changes to house rules if the change meets HUD standard criteria for house rules.
- Although the Connecticut General Statutes Sec. 19a-342 exempts public housing authorities from having to ban smoking on properties, the law does not prevent owners from implementing their own smoke free policies.
- A smoke free policy is no different than a "no pets" and "no loud music" policy.
- Owners may not deny a person the right to live on the property because they smoke but owners can regulate that the person not smoke on the property

Reasons to ban smoking:

- Reduced maintenance costs. See Cost Impact Chart
- Reduced turnover due to tenant complaints (secondhand smoke can cause nonsmokers to move out).
- Reduced insurance premiums.[2]
- Reduced fire risk.
    - Property losses from smoking-material fires total hundreds of millions of dollars every year.
    - Smoking is the leading cause of home fires and the number one cause of fire deaths in the United States.[3]

Ventilation is Not a Solution:

- According to the American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE):
    - There is no known ventilation or air cleaning system that can eliminate all the toxins from another resident's smoke.
    - Sealing outlets, cracks and other places where smoke seeps through does not eliminate smoke traveling from unit to unit.
    - ASHRAE encourages smoke-free policies as "the only complete solution to the problem of secondhand smoke."[11]

Remember, smoke free policies are about the smoke, not the smoker.

TENANTS RIGHTS

Tenants have rights protecting them from secondhand smoke:

- The federal *Fair Housing Act* (FHA) implies that landlords are to provide a safe and habitable environment to protect tenants.[6]
    - This means handling all unwanted nuisances such as noise, poor ventilation, heating and secondhand smoke exposure that substantially affects the tenant's enjoyment of the premises.
- The landlord should take actions to prevent secondhand smoke from causing harm to tenants and affecting their enjoyment of the property.
- Landlords that do not take action may be liable to legal action should the tenant show they have been harmed

Tenants can bring legal action regarding secondhand smoke exposure against the owner, manager or other tenants under common law.[7]

- Breach of the covenant of quiet enjoyment
- Negligence
- Breach of warranty of habitability
- Nuisance
- Intentional infliction of emotional distress
- Battery
- Constructive eviction
- Trespass[8]

- The *Americans With Disabilities Act* and the *FHA* state that no one can be discriminated against in workplaces, public places or in housing due to disability.
- Severe breathing problems are considered a disability. Facilities are required to provide reasonable accommodations to persons with severe breathing disabilities, which may include making the facility totally smoke-free.[9]
- Connecticut's code regulating landlord-tenant relations empowers the local health department/ district to determine whether ventilation or other sanitary conditions pose a threat to health, and if so, order the landlord.[10]

STEPS FOR IMPLEMENTING A SMOKE-FREE HOUSING POLICY

1. If you are still not sure about going smoke free, conduct a survey of your residents to understand their needs and interest in smoke free policies. (see sample survey)

2. Decide on the extent of the smoke free policy. Which areas will be included? Will the policy cover all the common areas inside and out of the building, the whole building including all individual units, the whole property or only a few buildings? Choose the best option for your property and tenants.

3. Create smoke free language to be added into the current property policies and leases. (see samples)

    - Develop a timeline for implementing the policies. The new policies should be implemented no sooner than 30 days after written notice is given to the tenants notifying them of the changes. A 90 day notice is recommended.

    - Develop a plan on how to work with existing tenants who smoke in their units. (One option is to grandfather them in until their lease expires). Remember though, as long as the grandfathered in are smoking in their units, people are still being exposed to second and third-hand smoke.

4. Hold a meeting with your staff to educate and gain support for the new policies and procedures.

5. Send a letter to tenants and place signs around the property announcing the plans for smoke free policies. (see sample letter)

6. Hold a meeting with your tenants to discuss the reasons why the property is going smoke free, the new policies and the consequences for not following the policies. Provide a way to allow your tenants to voice their opinions and concerns both at the meeting and anonymously.

7. Send a letter to tenants outlining the new smoke free policies, the date of implementation and the consequences for violating the policy. Have the tenants sign an agreement that they will abide by the policies. (see sample agreement)

8. Add the new smoke free policies into the property rules and new and renewing leases.

    - New policies for common areas (hallways, walkways, playgrounds, pools, etc.) do not need a lease addendum, only notification of the tenants.

    - New policies within individual units will need a lease addendum. Should the current tenant not want to abide by the new policy for their individual unit, wait until the lease expires and then add it into the lease renewal. (grandfathering)

9. Post visible signage around the property to make tenants, visitors and staff aware of the policy.

10. Advertise and market your units/property as smoke free in rental listings. *When asked, most tenants want to live in smoke free housing, even those who smoke*

STRATEGIES AND TOOLS TO GO SMOKE FREE

This information is for educational purposes only and is not to be construed as a legal opinion or as a substitute for obtaining legal advice from an attorney.

- National Center for Healthy Housing:www.nchh.org
- "Reasons to Explore Smoke-Free Housing" (developed by Smoke-Free Housing New England and Tohn Environmental Strategies for the NCHH)
- Smoke-Free Environments Law Project: www.tcsg.org/sfelp/home.htm
- Tobacco Control Legal Consortium- http://www.tclconline.org/
- Infiltration of Secondhand Smoke into Condominiums, Apartments and Other Multi-Unit Dwellings.
- Secondhand Smoke Multi-Unit Affordable Housing
- Tobacco Technical Assistance Consortium: www.ttac.org
- Tobacco Control Legal Consortium: www.tclconline.org
- Technical Assistance Legal Center: www.phlpnet.org/tobacco-control
- Americans for Nonsmokers' Rights Foundation: www.no-smoke.org
- CDC Healthy Homes Manual Smokfree Policies in Multi-Unit Housing

The Cost Impact

Cost to Rehabilitate a Unit Where Smoking is Prohibited vs. a Unit Where Smoking is Allowed

	Non- Smoking	Light Smoking	Heavy Smoking
General Cleaning	$240	$500	$720
Paint	$170	$225	$480
Flooring	$50	$950	$1,425
Appliances	$60	$75	$490
Bathroom	$40	$60	$400
TOTAL	**$560**	**$1,810**	**$3,515**

Data reflects surveys from housing authorities and subsidized housing facilities in New England. Collected and reported by Smoke-Free Housing New England, 2009.

(Source: National Center for Health Housing, Reasons to Explore Smoke–Free Housing, early Fall 2009)

U.S. Department of Housing and Urban Development
Office of Public and Indian Housing
Office of Healthy Homes and Lead Hazard Control

SPECIAL ATTENTION OF:	**NOTICE: PIH-2009-21 (HA)**
Regional Directors; State and Area Coordinators; Public Housing Hub Directors; Program Center Coordinators; Troubled Agency Recovery Center Directors; Special Applications Center Director; Public Housing Agencies; Resident Management Corporations; Healthy Homes Representatives	Issued: July 17, 2009 Expires: July 31, 2010 Cross Reference: 24 CFR 903.7(b)(3) 24 CFR 903.7(e)(1)

Subject: Non-Smoking Policies in Public Housing

1. **Purpose.** This notice strongly encourages Public Housing Authorities (PHAs) to implement non-smoking policies in some or all of their public housing units. According to the American Lung Association, cigarette smoking is the number one cause of preventable disease in the United States. The elderly and young populations, as well as people with chronic illnesses, are especially vulnerable to the adverse effects of smoking. This concern was recently addressed by the Family Smoking Prevention and Tobacco Control Act, P.L. 111-31, signed by the President on June 22, 2009. Because Environmental Tobacco Smoke (ETS) can migrate between units in multifamily housing, causing respiratory illness, heart disease, cancer, and other adverse health effects in neighboring families, the Department is encouraging PHAs to adopt non-smoking policies. By reducing the public health risks associated with tobacco use, this notice will enhance the effectiveness of the Department's efforts to provide increased public health protection for residents of public housing. Smoking is also an important source of fires and fire-related deaths and injuries. Currently, there is no Departmental guidance on smoking in public housing.

2. **Applicability.** This notice applies to Public Housing.

3. **Background.** Secondhand smoke, which is also known as environmental tobacco smoke (ETS), is the smoke that comes from the burning end of a cigarette, pipe or cigar, and the smoke exhaled from the lungs of smokers. ETS is involuntarily inhaled by nonsmokers, and can cause or worsen adverse health effects, including cancer, respiratory infections and asthma. The 2006 Surgeon General's report on secondhand smoke identifies hundreds of chemicals in it that are known to be toxic. The report (*The Health Consequences of Involuntary Exposure to Secondhand Smoke)* is located at www.cdc.gov/tobacco/data_statistics/sgr/index.htm. Secondhand smoke causes almost 50,000 deaths in adult non-smokers in the United States each year, including approximately 3,400 from lung cancer and another 22,000 to 69,000 from heart disease.

Secondhand smoke exposure causes disease and premature death in children and adults who do not smoke according to the U.S. Environmental Protection Agency (EPA) www.epa.gov/smokefree/healtheffects.html.

There are over 1.2 million residents who reside in public housing. Residents between the ages of 0-17 represent 39 percent of public housing residents. Elderly residents over the age of 62 represent 15 percent of public housing residents. That accounts for at least 54 percent of public housing residents that could be at increased risk to the adverse effects of cigarette smoking. There are also a considerable number of residents with chronic diseases such as asthma and cardiovascular disease who are particularly vulnerable to the effects of ETS. Secondhand smoke lingers in the air hours after cigarettes have been extinguished and can migrate between units in multifamily buildings.

Based on data from the U.S. Fire Administration (USFA) of the Department of Homeland Security, there were an estimated 18,700 smoking-material fires in homes in 2006. These fires caused 700 civilian deaths (other than firefighters'), and 1,320 civilian injuries, and $496 million in direct property damage www.nfpa.org/assets/files/PDF/OS.Smoking.pdf. In multifamily buildings, smoking is the leading cause of fire deaths: 26 percent of fire deaths in 2005 www.usfa.dhs.gov/downloads/pdf/publications/Residential_Structure_and_Building_Fires.pdf.

4. **Policy Discretion**. PHAs are permitted and strongly encouraged to implement a non-smoking policy at their discretion, subject to state and local law. Some PHAs have established smoke-free buildings. Some PHAs have continued to allow current residents who smoke to continue to do so, but only in designated areas and only until lease renewal or a date established by the PHA. Some PHAs are prohibiting smoking for new residents. According to a state-funded anti-smoking group, the Smoke-Free Environment Law Project of the Center for Social Gerontology, there are over 112 PHAs and housing commissions across the country that have implemented non-smoking policies. PHAs should consult with their resident boards before adopting non-smoking policies at their projects.

5. **PHA Plans**. PHAs opting to implement a non-smoking policy should update their PHA plans. According to 24 CFR 903.7(e), their plan must include their statement of operation and management and the rules and standards that will apply to their projects when the PHA implements their non-smoking policy. PHAs are encouraged to revise their lease agreements to include the non-smoking provisions. If PHAs institute non-smoking polices, they should ensure that there is consistent application among all projects and buildings in their housing inventory in which non-smoking policies are being implemented.

6. **Indoor Air Quality (IAQ).** According to the U.S. Green Building Council (USGBC), toxin-free building materials used in green buildings help combat indoor air pollution. Good IAQ includes minimizing indoor pollutants. As discussed above, ETS is known to be an indoor air pollutant; as a result it would be difficult for a PHA to achieve good IAQ in its buildings if residents are allowed to smoke, especially indoors. During construction or renovation of projects, PHAs should consider actions such as installing direct vent combustion equipment and fireplaces; providing for optimal, controlled, filtered ventilation and air sealing between living areas and garage or mechanical areas, and the use of paints and other materials that emit no or low levels of volatile chemicals (volatile organic compounds or VOCs). Since 65 percent of the public housing inventory was built prior to 1970, it would be hard for a PHA to implement retrofits that could improve IAQ significantly, unless renovation was scheduled. Also, if a PHA does conduct renovations to improve IAQ without also implementing a non-smoking policy, the IAQ benefits of the renovation would not be fully realized. A non-smoking policy is an excellent approach for those PHAs that are trying to achieve improved IAQ without the retrofit costs.

7. Maintenance. It is well known that turnover costs are increased when apartments are vacated by smokers. Additional paint to cover smoke stains, cleaning of the ducts, replacing stained window blinds, or replacing carpets that have been damaged by cigarettes can increase the cost to make a unit occupant ready. View the Sanford Maine Housing Authority case study at http://www.smokefreeforme.org/landlord.php?page=Save+Money%2C%3Cbr%3ESave+Your+Building.

8. **Smoking Cessation National Support.** Because tobacco smoking is an addictive behavior, PHAs that implement non-smoking policies should provide residents with information on local smoking cessation resources and programs. Local and state health departments are sources of information on smoking cessation; see the American Lung Association's (ALA's) Web page on State Tobacco Cessation Coverage www.lungusa2.org/cessation2 for information on cessation programs, both public and private, in all States and the District of Columbia. The National Cancer Institute's Smoking Quit Line can be called toll-free at 877-44U-QUIT (877-448-7848). Hearing- or speech-challenged individuals may access this number through TTY by calling the toll-free Federal Relay Service at 800-877-8339. PHAs that implement non-smoking policies should similarly be persistent in their efforts to support smoking cessation programs for residents, adapting their efforts as needed to local conditions.

9. **Further Information**. For further information related to this notice, please contact Dina Elani, Director, Office of Public Housing Management and Occupancy Division at (202) 402-2071.

/s/

Sandra B. Henriquez
Assistant Secretary for Public and Indian Housing

/s/

Jon L. Gant,
Director, Office of Healthy Homes and Lead Hazard Control

SAMPLE SMOKE-FREE POLICIES
AND
LEASE ADDENDUMS

NO SMOKING POLICY AGREEMENT

I understand that XXXXXXX has a No Smoking Policy that prohibits smoking in any of the common areas, within any enclosed areas of the complex including individual apartments, and individual decks and patios of the complex. I also understand that there is a designated smoking area XXXXXXX that residents and guests who smoke may use.

I have received and read a copy of the XXXXXXXX No Smoking Policy, and agree to abide by its provisions.

_____ _____

Resident/Applicant Signature Date

_____ _____

Administrator Date

Source: Via Pacifica Gardens: Seascape Housing Board

Sample of a No Smoking Policy

(Name of Complex)
NO SMOKING POLICY

The ultimate objective of this policy is to eventually have a smoke free facility, while at the same time respecting the rights of current residents who are smokers.

Out of concern for the effects that second hand smoke has on those with respiratory, or other health related conditions, the XXXXXX Board of Directors have approved the following policy.

A. REGULATIONS OF SMOKING INDOORS:

1. Smoking shall be prohibited in all enclosed areas of XXXXXX. This includes, but is not limited to, the Community Building, all common areas, individual apartments, hallways, stairs, elevators, restrooms, motor vehicles owned or leased by XXXXX, and any other enclosed areas.

2. If there are current residents of XXXXX who are both a) residents of XXXXX and b) current smokers prior to the adoption date of this smoking regulation, these residents shall be designated as "Grand fathered residents."

3. Notwithstanding any other provision of this regulation to the contrary, smoking shall be prohibited in all enclosed areas of XXXXXX except that "Grand fathered residents" shall be allowed to smoke only in their individual apartments and the designated smoking area. Smoking by "Grand fathered residents" shall be prohibited in all areas as noted above in Item #1 including all non-Grand fathered residents apartments.

B. REGULATION OF SMOKING OUTDOORS:

1. Notwithstanding the above prohibition on smoking in enclosed areas, XXXXXXX shall also prohibit smoking in all outdoor areas, including individual apartment decks and patios, except that a designated smoking area will be provided in the xxxxx area. This is an area that is physically accessible to all residents, and located a reasonable distance from any apartment to ensure that tobacco smoke does not enter the enclosed areas of xxxxxxx.

2. Residents and guests are allowed to use the outdoor designated smoking area at any time, but must not infringe on any resident's right to the quiet enjoyment of their apartment.

C. COMMUNICATION OF NO SMOKING POLICY

1. The no smoking policy of XXXXXXXX shall be communicated by the Administrator to all current employees, residents, and applicants at least 60 days prior to its effective date, and at the time of employment for all employees, and prior to admission and/or prior to the signing of a lease for any new resident.

2. The effective date of this no smoking policy will be 60 days following the approval by XXXXXXX Board of Directors.

Approved by the XXXXXX Housing Board: (date)

This addendum can be used for both tenant's unit and common areas. Note, if you are making changes to policies in common areas, the policy can be introduced at any time with reasonable advance notice.

Addendum to Lease[1]

SMOKEFREE POLICY:

Due to the increased risk of fire, and the known health effects of secondhand tobacco smoke, smoking is prohibited in any area of the property, both private and common, whether enclosed or outdoors. The policy applies to all owners, tenants, guests, and servicepersons.

Smoking: The term "Smoking" means inhaling, exhaling, burning, or carrying any lighted device to include cigar, cigarette or other similar products in any manner or in any form.

- - - -

This agreement addendum designates the entire building and entrance as smoke-free.
This document can be introduced with a new/renewed lease or upon tenants approval.
All information provided is for illustrative purposes only. Seek legal counsel before adding language to leasing agreements.

Smoke-Free Multi-Unit Housing Policy
Smoke-free Living[1]

Resident/s agrees to the following conditions of living in the Smoke-Free Multi-Unit Housing known as Street #_____, City, State, Zip:

1. Resident/s will not use tobacco products at any time while in the residence known as Street #_____, City, State, Zip.

2. Resident/s agree that guest/s will not use tobacco products at any time in the residence known as Street #_____, City, State, Zip.

3. Neither Resident/s nor guest/s will use tobacco products within 25 feet of any entrance, window or vent of the building known as Street #_____, City, State, Zip.

Resident/s agrees that in the event that any tobacco product is used in the address known as Street #_____, City, State, Zip, he/she will be issued a non-curable 3 Day Notice to vacate the premises.

_____
Agent for (Name of Apartment Complex)

_____
Date

_____
Resident

_____
Date

[1] http://www.breath-ala.org/html/drift_sapapt.htm

All information provided is for illustrative purposes only. Seek legal counsel before adding language to leasing agreements.

Sample Tenant Letter and Secondhand Smoke Survey

[Date]

Dear Residents:

We are pleased that you have chosen to reside at [name of building/property]. The [name of management company or apartment building] has been studying changes that are occurring in apartment living. Many owners are deciding to prohibit the use of tobacco products within their properties.

Apartment building owners are adopting smoke-free policies for a number of reasons. Secondhand and thirdhand smoke are health hazards, especially for children, the elderly, and persons with chronic illnesses. There is no safe level of exposure to secondhand smoke. In addition, smoking materials are the leading cause of residential fire deaths in the United States.

To ensure the health and safety of all persons living here, we are considering adopting a smoke-free policy for our building and individual units. We would like to hear from you! Let us know what you think about having rules about tobacco use in the building and on the grounds. Please fill out the short survey below and return it to [name of office, etc.].

Sincerely,

[Apartment Manager's name]

Cut here - - -

Sample of a No Smoking Policy

(Name of Complex)
NO SMOKING POLICY

The ultimate objective of this policy is to eventually have a smoke free facility, while at the same time respecting the rights of current residents who are smokers.

Out of concern for the effects that second hand smoke has on those with respiratory, or other health related conditions, the XXXXXX Board of Directors have approved the following policy.

A. REGULATIONS OF SMOKING INDOORS:

1. Smoking shall be prohibited in all enclosed areas of XXXXXX. This includes, but is not limited to, the Community Building, all common areas, individual apartments, hallways, stairs, elevators, restrooms, motor vehicles owned or leased by XXXXX, and any other enclosed areas.

2. If there are current residents of XXXXX who are both a) residents of XXXXX and b) current smokers prior to the adoption date of this smoking regulation, these residents shall be designated as "Grand fathered residents."

3. Notwithstanding any other provision of this regulation to the contrary, smoking shall be prohibited in all enclosed areas of XXXXXX except that "Grand fathered residents" shall be allowed to smoke only in their individual apartments and the designated smoking area. Smoking by "Grand fathered residents" shall be prohibited in all areas as noted above in Item #1 including all non-Grand fathered residents apartments.

B. REGULATION OF SMOKING OUTDOORS:

1. Notwithstanding the above prohibition on smoking in enclosed areas, XXXXXXX shall also prohibit smoking in all outdoor areas, including individual apartment decks and patios, except that a designated smoking area will be provided in the xxxxx area. This is an area that is physically accessible to all residents, and located a reasonable distance from any apartment to ensure that tobacco smoke does not enter the enclosed areas of xxxxxxx.

2. Residents and guests are allowed to use the outdoor designated smoking area at any time, but must not infringe on any resident's right to the quiet enjoyment of their apartment.

C. COMMUNICATION OF NO SMOKING POLICY

1. The no smoking policy of XXXXXXXX shall be communicated by the Administrator to all current employees, residents, and applicants at least 60 days prior to its effective date, and at the time of employment for all employees, and prior to admission and/or prior to the signing of a lease for any new resident.

2. The effective date of this no smoking policy will be 60 days following the approval by XXXXXXX Board of Directors.

Approved by the XXXXXX Housing Board: (date)

NO SMOKING POLICY AGREEMENT

I understand that XXXXXXX has a No Smoking Policy that prohibits smoking in any of the common areas, within any enclosed areas of the complex including individual apartments, and individual decks and patios of the complex. I also understand that there is a designated smoking area XXXXXXX that residents and guests who smoke may use.

I have received and read a copy of the XXXXXXXX No Smoking Policy, and agree to abide by its provisions.

_____ _____

Resident/Applicant Signature Date

_____ _____

Administrator Date

Source: Via Pacifica Gardens: Seascape Housing Board

This addendum can be used for both tenant's unit and common areas. Note, if you are making changes to policies in common areas, the policy can be introduced at any time with reasonable advance notice.

Addendum to Lease[1]

SMOKEFREE POLICY:

Due to the increased risk of fire, and the known health effects of secondhand tobacco smoke, smoking is prohibited in any area of the property, both private and common, whether enclosed or outdoors. The policy applies to all owners, tenants, guests, and servicepersons.

Smoking: The term "Smoking" means inhaling, exhaling, burning, or carrying any lighted device to include cigar, cigarette or other similar products in any manner or in any form.

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ASHRAE Position Document on

Environmental Tobacco Smoke

Approved by ASHRAE Board of Directors
June 25, 2008

American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.

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404-636-8400 • fax: 404-321-5478 • www.ashrae.org

COMMITTEE ROSTER

The ASHRAE Position Document on Environmental Tobacco Smoke was originally developed in 2004 by he Society's Environmental Tobacco Smoke Position Document Committee. Their current affiliations are listed below.

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Executive Summary

This position document has been written to provide the membership of the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) and other interested persons with information on the health consequences of exposure of nonsmokers to tobacco smoke in indoor environments, and on the implications of this knowledge for the design, installation and operation of heating, ventilating, and air-conditioning (HVAC) systems. ASHRAE's sole objective is to advance the arts and sciences of heating, refrigeration, air conditioning and ventilation, and their allied arts and sciences and related human factors, for the benefit of the public. Therefore, the health effects of indoor exposure to emissions from cigarettes, cigars, pipes, and other tobacco products have long been relevant to ASHRAE.

For more than three decades, researchers have investigated the health and irritant effects among nonsmokers exposed to tobacco smoke in indoor environments. The preponderance of credible evidence links passive smoking to specific diseases and other adverse health effects in people. A number of national and global review groups and agencies have concluded that exposure of nonsmokers to tobacco smoke causes adverse effects to human health. No cognizant authorities have identified an acceptable level of environmental tobacco smoke (ETS) exposure, nor is there any expectation that further research will identify such a level.

International experience has been gained over several decades with using various strategies to reduce ETS exposure, including separation of smokers from nonsmokers, ventilation, air cleaning and filtration, and smoking bans. Only the last provides the lowest achievable exposures for nonsmokers and is the only effective control method recognized by cognizant authorities (see Findings of Cognizant Authorities below). At the time of this writing, several nations[1, 2,] 25 states[3] in the U.S. and hundreds of municipalities and other jurisdictions have banned tobacco smoking completely in all public buildings and workspaces. The U.S. government has banned smoking in its workplaces. Experience with such bans documents that they can be effective, practically eliminating ETS exposure of non-smokers. While exposure is decreasing internationally because of these smoking bans in public and private buildings, and a decrease in the prevalence of smoking, substantial portions of the population are still regularly exposed in workplaces, homes and public places, such as entertainment venues.

ASHRAE concludes that:

- It is the consensus of the medical community and its cognizant authorities that ETS is a health risk, causing lung cancer and heart disease in adults, and exacerbation of asthma, lower respiratory illnesses and other adverse effects on the respiratory health of children.
- At present, the only means of effectively eliminating health risk associated with indoor exposure is to ban smoking activity.
- Although complete separation and isolation of smoking rooms can control ETS exposure in non-smoking spaces in the same building, adverse health effects for the occupants of the smoking room cannot be controlled by ventilation.
- No other engineering approaches, including current and advanced dilution ventilation or air cleaning technologies, have been demonstrated or should be relied upon to control health risks from ETS exposure in spaces where smoking occurs. Some engineering measures may reduce that exposure and the corresponding risk to some degree while also addressing to some extent the comfort issues of odor and some forms of irritation.
- An increasing number of local and national governments, as well as many private building owners, are adopting and implementing bans on indoor smoking.
- At a minimum, ASHRAE members must abide by local regulations and building codes and stay aware of changes in areas where they practice, and should educate and inform their clients of the substantial limitations and the available benefits of engineering controls.
- Because of ASHRAE's mission to act for the benefit of the public, it encourages elimination of smoking in the indoor environment as the optimal way to minimize ETS exposure.

1.0 INTRODUCTION

Providing healthful and comfortable indoor environments through the control of indoor air quality is a fundamental goal of building and HVAC design and operation. ASHRAE has long been active in providing engineering technology, standards and design guidance in support of this goal. These activities are consistent with the society's Certificate of Consolidation, which states that ASHRAE's sole objective is "… to advance the arts and sciences of heating, refrigeration, air conditioning and ventilation, and their allied arts and sciences and related human factors, for the benefit of the public."

This position document has been written to provide the membership of ASHRAE and other interested persons with information on what is known about the health consequences to nonsmokers from exposure to tobacco smoke in indoor environments and on the implications of this knowledge for the design, installation and operation of HVAC systems. Because tobacco smoke is a source of both gaseous and particulate contaminants, the health effects of inhaling smoke from cigarettes, cigars, pipes, or other tobacco products in indoor environments have long been relevant to ASHRAE, and specifically to ASHRAE Standard 62.1, Ventilation for Acceptable Indoor Air Quality[4]. ASHRAE continues to re-affirm its policy stating that while "ASHRAE does not make findings as to the health and safety impacts of environmental exposures," its document and activities "shall consider health and safety impacts."[5,6] Therefore, it is important for ASHRAE to identify these impacts as they relate to the activities of its members and then to consider them in its documents, as it has done in ASHRAE Standard 62.1. ASHRAE also adopted a policy stating that ASHRAE standards and guidelines will not set ventilation requirements and will not claim to provide acceptable indoor air quality in smoking spaces. Note that this policy does not prevent ASHRAE from providing guidance for designing smoking spaces in other documents, but these documents would only address odor and other comfort goals.

Concerns regarding tobacco smoke in indoor environments have arisen from evidence of adverse health and irritation effects caused among nonsmokers exposed to tobacco smoke indoors. The relevant evidence comes from information on tobacco smoke and its components; from toxicologic studies of tobacco smoke and some of its specific components; from the substantial epidemiologic, pathologic, and clinical evidence that shows the health effects of active smoking; and from epidemiologic studies that have assessed the risks of passive smoking. The latter studies, carried out over the last three decades, have linked passive smoking to specific diseases and other adverse health effects in children and adults.

There are now several decades of international experience with the use of various strategies to reduce ETS exposure, including separation of smokers and nonsmokers, ventilation, air cleaning and filtration, and bans. Only the last provides the lowest achievable exposures for nonsmokers and experience with such bans documents that they can be effective[2,7]. While exposure is decreasing nationally because of these smoking bans in public and private buildings, and because of decreases in the prevalence of smoking, substantial portions of the population are still regularly exposed in workplaces, homes, and public places, such as entertainment venues.

2.0 TOBACCO SMOKE IN INDOOR SPACES: CHARACTERISTICS AND CONCENTRATIONS

2.1 Characteristics of tobacco smoke in indoor spaces

While tobacco may be smoked in other forms (e.g., pipes and cigars), the cigarette is the principal source of exposure of nonsmokers to tobacco smoke in the United States and other countries. The burning cigarette produces smoke primarily in the form of mainstream smoke (MS) — that smoke inhaled by the smoker during puffing — and sidestream smoke (SS) — that smoke released by the smoldering cigarette while not being actively smoked. Because of the lower temperature in the burning cone of the smoldering cigarette, many tobacco combustion products are enriched in SS compared to MS.

Nonsmokers are exposed to the combination of diluted SS that is released from the cigarette's burning end and the MS exhaled by the active smoker[8]. This mixture of diluted SS and exhaled MS has been referred to as secondhand smoke or environmental tobacco smoke (ETS); the term used in this position document. Exposure to ETS is also commonly referred to as passive or involuntary smoking.

Tobacco smoke consists of a complex mixture of particles and gases, with thousands of individual chemical components. The particles in ETS are in the submicron size range, and as such, penetrate deeply into the lung when inhaled. The respiratory tract (which extends from the nose to the alveoli) absorbs the gases in a manner dependent on their chemical and physical characteristics. For example, reactive and highly soluble gases, such as formaldehyde, are adsorbed in the upper respiratory tract, while less soluble and more inert

gases, such as carbon monoxide, reach the alveoli and may be systemically absorbed. Additionally, these particles and gases also impact the mucous membranes of the eyes. While exposures of involuntary and active smoking differ quantitatively and, to some extent, qualitatively[7,9-14], involuntary smoking results in exposure to multiple toxic agents including known human carcinogens generated by tobacco combustion[7, 9-15].

2.2 Exposure to tobacco smoke in indoor spaces

The concentration of the various ETS constituents in an indoor space depends on the number of smokers and their pattern of smoking, the volume of the space, the ventilation rate and the effectiveness of the air distribution, the rate of removal of ETS from the indoor air by air cleaners, deposition of particles onto surfaces, and surface adsorption and re-emission of gaseous components. Because ETS is a complex mixture, measurements of single components are of varying specificity and none alone is considered to indicate the potential toxicity of ETS at a particular concentration. Therefore, measurements of multiple surrogates have been used as indicators of the concentration of the mixture for research and public health purposes. These measures include respirable suspended particles (RSP), nicotine, benzene, solanesol, 3-ethenyl pyridine (3-EP) and carbon monoxide. Such measurements have demonstrated contamination of indoor air wherever smoking takes place. Biomarkers of ETS exposure, i.e., indicators in biological materials such as nicotine in saliva and blood, have also been measured; measurable concentrations of these biomarkers (e.g. cotinine) have been found in the bodies of exposed nonsmokers, indicating uptake of ETS.

3.0 HEALTH EFFECTS OF INVOLUNTARY SMOKING

3.1 Cognizant authorities

Following the same approach used in the landmark 1964 report of the U.S. Surgeon General on smoking and health, the finding that involuntary smoking causes disease or other adverse effects has been based in systematic review of the evidence and the application of criteria for evaluating the strength of evidence in support of causality. The principles for causal inference were set out in the 1964 report and revisited in the subsequent reports of the Surgeon General[7,16,17]. This approach for evidence evaluation involves systematically gathering and assessing the quality of individual research studies, and then evaluating the overall strength of evidence using accepted causal criteria as guidelines. The term causal criteria refers to a set of principles for evaluating evidence for causal inference. These criteria include the consistency of the evidence, the strength of the association of involuntary smoking with the health outcome of concern, the specificity of that association, proper temporality of the association (i.e., involuntary smoking proceeds onset of the health outcome), and the coherence of the evidence.

Using this general approach, the scientific evidence on the health consequences of exposure to ETS has been extensively reviewed by a number of independent expert groups (cognizant authorities) in the United States and internationally, with similar conclusions over the last two decades (Table 1). In the United States, five major cognizant authorities have examined the evidence, including the U.S. Surgeon General[13], the U.S. Environmental Protection Agency[14], the National Research Council[11], the California Environmental Protection Agency[18-20], and the National Toxicology Program[21]. The first major reviews were published in 1986.
As the evidence has expanded, further reviews have been carried out in the United States and internationally. These conclusions are also supported by positions of major health organizations, such as the American Cancer Society, the American Heart Association, the American Lung Association, the American Medical Association, and the British Medical Association, and many professional societies, such as the American Public Health Association, the American Thoracic Society, the American College of Preventive Medicine, the American Academy of Pediatrics and others.

The validity of the conclusions from these cognizant authorities is largely based on the integrity of the processes used to ensure that the reviews and conclusions are free of bias. Factors used to assess the potential role of bias in these processes include the expertise and independence of the report's authors and reviewers, the comprehensiveness of the approach to reviewing the scientific evidence, and the process for peer-review of the report.

3.2 Findings of Cognizant Authorities

Scientific evidence indicates adverse health effects from passive smoking throughout the life-span (Table 1). Some of the first epidemiological studies on ETS and health were reported in the late 1960s[22-24] and since then there have been hundreds of scientific papers on the health effects of ETS exposure. Exposure to ETS in actual indoor spaces has since been linked to numerous adverse effects in infants and children. The adverse effects may even extend to gestation, as ETS components and metabolites reach the fetus of pregnant mothers who are exposed. There is evidence suggesting that ETS exposure of the mother reduces birth weight and that child development and behavior are adversely affected by parental smoking[25,26]. ETS exposure causes increased risk for more severe lower respiratory infections, middle ear disease, chronic respiratory symptoms and asthma, and reduces the rate of lung function growth during childhood. There is no strong evidence at present that ETS exposure increases childhood cancer risk[27].

The first major studies on passive smoking and lung cancer in non-smoking adults were reported in 1981 [28,29] and by 1986 the evidence supported the conclusion that passive smoking was a cause of lung cancer in non-smokers. Subsequent evidence has continued to identify other diseases and adverse effects of passive smoking in adults, and the conclusion has been reached that coronary heart disease is caused by ETS exposure (Table 1). The number of coronary heart disease deaths caused by ETS greatly exceeds the number of ETS-caused lung cancer deaths.

Thus, the epidemiological evidence, along with the other relevant lines of evidence, has been reviewed periodically by cognizant authorities with an increasingly lengthy list of diseases and other adverse effects associated with ETS exposure in the nearly two decades since the first causal conclusions were reached in 1986. Notably, conclusions offered by the cognizant authorities have converged and no conclusions have ever been reversed. The conclusions of these studies refer to ETS exposure in general since the biological action does not depend on the particular type of indoor environments.

The reports and their conclusions have not indicated that thresholds can be identified below which effects would not be anticipated, and in general, risks tend to increase with the level of exposure and conversely to decrease with a reduction in exposure. On a biological basis, a threshold would not be anticipated for the carcinogens in ETS [20;23]. Additionally, the scientific evidence recognizes substantial subpopulations potentially susceptible to ETS, such as children and adults with asthma or heart disease, whose disease may be exacerbated by ETS exposure.

In the absence of a quantitative criterion for acceptable exposure, the only protective measure for effective control that has been recognized by cognizant authorities is an indoor smoking ban, leading to near zero exposure.

4.0 CONSIDERATIONS RELATED TO HVAC SYSTEM DESIGN AND OPERATION

4.1 General principles

Societal recognition of the public health risks to children and adults of ETS exposure has motivated the use of strategies to reduce or eliminate exposure to ETS. Exposure to ETS has been reduced through a variety of strategies, including those that reduce, but do not eliminate, exposure to ETS. Others, such as banning or restricting smoking, result in a complete or nearly complete reduction of exposure to ETS. The specific strategies may be regulatory or voluntary in their application. Because smoking is a strong localized source of a complex mixture of hazardous agents with different physical and chemical characteristics, multiple engineering techniques need to be employed to minimize ETS exposure in non-smoking areas, absent a smoking ban. There is no target for such reduction, as no cognizant authority has defined a safe level of ETS exposure because of the complex nature of ETS, the multiple health and irritation hazards, and varying individual susceptibility to ETS.

Practitioners must always follow the laws and regulations in laws, regulations and directives at all levels of government, as well as industry codes and standards. Even where permitted by law, many developers, building owners, and operators do not allow smoking. For instance, BOMA International has taken the position that secondhand smoke should not be allowed in buildings and supports legislation to ban smoking in buildings[31]. In the U.S. and many other countries as well, smoking has been banned in most office buildings, shopping center common areas and in most retail sales areas. Many operators of restaurants and other hospitality venues have voluntarily done the same. Therefore, it is recommended that engineers work with their clients to define their intent for addressing ETS exposure in their building. In working with their clients, engineers need to take account of all laws and regulations relevant to ETS, and with their clients develop a strategy that will result in the lowest ETS exposure to building occupants within the context of a building's intended use.

4.2 Design and Operation Approaches

There are four general cases of space-use and smoking activity that lead to different engineering approaches to addressing ETS exposure in buildings: 1) banning smoking indoors; 2) allowing smoking only in isolated rooms; 3) allowing smoking in separate but not isolated spaces; and 4) totally mixing occupancy of smokers and nonsmokers. These approaches do not necessarily account for all circumstances, but are in a sequence from most to least effective in controlling ETS exposure.

1. **Banning Smoking Indoors:** A total ban on indoor smoking is the only effective means of controlling the health risks associated with ETS exposure. This approach has been implemented by many governments and private building owners. While there are no system design issues related to this approach, the existence of outdoor smoking areas near the building and their potential impacts on entryway exposure and outdoor air intake locations should be discussed with the developer, building owner, and/or building operator.

2. **Smoking Only in Isolated Rooms:** Allowing smoking only in separate and isolated rooms, typically dedicated to smoking, can control ETS exposure in non-smoking spaces in the same building. Effective isolation is achievable through airflow and pressure control including location of supply outlets and return and exhaust air inlets to preserve desirable airflow directions at doorways, as well as the use of separate ventilation systems serving the smoking spaces. When using this approach, the design and operation need to address entrainment of exhaust air containing ETS into the non-smoking area's system through the air intake, windows, and other airflow paths. In addition, the airtightness of the physical barriers between the smoking and nonsmoking areas, as well as of the connecting doorways, requires special attention. Some smoking lounges in airports or office buildings exemplify use of this control approach. The risk of adverse health effects for the occupants of the smoking room cannot be controlled by ventilation. Engineering techniques to reduce odor and irritation in the smoking room include dilution ventilation, and air cleaning and filtration techniques.

3. **Smoking in Separate But Not Isolated Spaces:** In the third situation, smoking is allowed in separate spaces that are not physically isolated from non-smoking areas. This approach includes spaces where smokers and non-smokers are separated but still occupy a single space or a collection of smoking and non-smoking spaces served by the same air handler. Examples can be found in restaurants and bars with smoking and non-smoking areas, or buildings where smoking is restricted to specific rooms but a common, recirculating air handler serves both the smoking and non-smoking rooms. This situation also includes spaces where a common air handler does not recirculate from the smoking to the nonsmoking area and spaces with multiple air handlers.
   Engineering techniques to reduce odor and irritation include, directional airflow patterns achieved through selective location of supply and exhaust vents, and air cleaning and filtration. These techniques may reduce ETS exposure in non-smoking areas but limited evidence is available on their effectiveness. Movement of people between non-smoking and smoking areas may disrupt intended airflow patterns, degrading the effectiveness of exposure reduction for the non-smoking occupants (including workers).

4. **Mixed Occupancy of Smokers and Nonsmokers:** If smoking is allowed throughout a space or a collection of spaces served by the same air handler, with no effort to isolate or separate the smokers and nonsmokers, there is no currently available or reasonably anticipated ventilation or air cleaning system that can adequately control or significantly reduce the health risks of ETS. For example, this situation includes unrestricted smoking in homes, dormitories, casinos, bingo parlors, small workplaces, and open plan office spaces. Air cleaning, ordinary dilution ventilation and displacement ventilation can provide some reduction in exposure but they cannot minimize adverse health effects, nor odor and sensory irritation for nonsmokers in general.

5.0 CONCLUSIONS

- There is a consensus among cognizant medical authorities that ETS is a health risk, causing lung cancer and heart disease in adults, and causing adverse effects on the respiratory health of children, including exacerbating asthma and increasing risk for lower respiratory tract infection.
- At present, the only means of eliminating health risks associated with indoor exposure is to ban all smoking activity.
- Although complete separation and isolation of smoking rooms can control ETS exposure in non-smoking spaces in the same building, adverse health effects for the occupants of the smoking room cannot be controlled by ventilation.
- No other engineering approaches, including current and advanced dilution ventilation, "air curtains" or air cleaning technologies, have been demonstrated or should be relied upon to control health risks from ETS exposure in spaces where smoking occurs, though some approaches may reduce that exposure and address odor and some forms of irritation.
- An increasing number of local and national governments, as well as many private building owners, are implementing/adopting bans on indoor smoking.
- At a minimum, ASHRAE members must abide by local regulations and building codes and stay aware of changes where they practice; they should also educate/inform their clients of the limits of engineering controls in regard to ETS.
- Because of ASHRAE's mission to act for the benefit of the public, it encourages elimination of smoking in the indoor environment as the optimal way to control ETS exposure.

Table 1. Adverse Effects from ETS Throughout the Life Span

Health Effect	SG 1984[12]	SG 2006[7]	EPA 1992[14]	CalEPA 2005[20]	UK 1998[32]	WHO 1999[26]	IARC 2002[27]
Children							
Risk factor for SIDS		Yes/c		Yes/c	Yes/a	Yes/c	
Increased prevalence of respiratory illnesses	Yes/a	Yes/c	Yes/c	Yes/c	Yes/c	Yes/c	
Decrement in pulmonary function	Yes/a	Yes/c	Yes/a	Yes/c		Yes/c	
Increased frequency of bronchitis, pneumonia	Yes/a	Yes/c	Yes/a	Yes/c		Yes/c	
Increase in chronic cough, phlegm		Yes/c		Yes/c		Yes/c	
Increased frequency of middle ear effusion		Yes/c	Yes/c	Yes/c	Yes/c	Yes/c	
Increased severity of asthma episodes and symptoms		Yes/c	Yes/c	Yes/c		Yes/c	
Risk factor for new asthma		Yes/a	Yes/a	Yes/c			
Low Birth Weight		Yes/c		Yes/c			
Adults							
Risk factor for lung cancer		Yes/c	Yes/c	Yes/c	Yes/c	NA	Yes/c
Risk factor for breast cancer		Yes/a		Yes/c			
Risk factor for heart disease		Yes/c		Yes/c	Yes/c	Yes/a	
Respiratory symptoms and lung function	Yes/a	Yes/a		Yes/c			
Increased severity of asthma episodes and symptoms		Yes/a		Yes/c			

Yes/a = association
Yes/c = cause
N/A = not addressed

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Thirdhand Smoke in Apartments and Condos: Recommendations for Landlords and Property Managers

If you're a landlord or property manager, you may have had tenants report that tobacco smoke is drifting into their unit from neighbors who smoke. This is a serious issue, as secondhand smoke is a confirmed health hazard with no safe level of exposure. Everyone should have the right to a healthy, safe unit that's free from toxic air. Do you have questions and concerns about tenants smoking in your buildings? **Learn more about your options** at www.no-smoke.org/homes.html.

If smoking is allowed in your buildings, you're probably familiar with the stale odor of tobacco smoke that lingers in and near apartments of people who smoke indoors, even after they have moved out. Even once a person who smokes has moved out, the carpets and drapes still smell like smoke, and walls and ceilings may have a yellowish stain from nicotine and tar. The smoke odor may also increase when heaters or air conditioning is turned on.

Does this sound familiar? These are all indicators of thirdhand smoke, which is the residual contamination that smoke from cigarettes, cigars, and other tobacco products leave behind. This residue builds up on surfaces and furnishings and lingers in rooms long after smoking stops. It may seem merely like an offensive, stale smell, but it is also indicates the presence of tobacco toxins.

Tobacco smoke is made up of gases and particulates, including carcinogens and heavy metals, like arsenic, lead, and cyanide. Sticky, toxic substances, like nicotine and tar, can cling to walls and ceilings. Gases can be absorbed into carpets, draperies, and other surfaces. A 2003 study found that tobacco residue is present in dust and on surfaces throughout places where smoking has occurred.[1] A 2002 study found that the toxic brew of thirdhand smoke can reemit (off-gas) back into the air and recombine to form harmful compounds that remain at high levels long after smoking has stopped.[2] A 2010 study found that nicotine in thirdhand smoke forms carcinogens, which are cancer-causing substances. Sticky nicotine remains on surfaces for days and weeks, so the carcinogens continue to be created over time, which are then inhaled, absorbed or ingested by tenants.[3]

Because of this thirdhand smoke contamination, apartment units or condos where smoking has taken place require **extensive turnover work and repairs at significant cost for you**. In addition to being toxic, even someone who smokes probably does not want to move into a unit that reeks of stale smoke. Overall, most tenants prefer smokefree housing.[4]

What can a landlord do?

First, consider adopting a no-smoking policy for your buildings. A smokefree policy is legal and easy to implement, reduces tenant complaints, saves you money,[5] reduces fire risk,[6] and is an amenity people are looking for[7] in housing. **Restoring a unit after a smoking tenant moves out can be expensive and time-consuming, so you might as well do it only one more time!**

Second, when converting a smoke-filled unit to a non-smoking unit, a landlord should, at a minimum:

1. **Thoroughly wash walls and ceilings with detergent and very hot water** to remove as much nicotine and tar residue as possible. Wear gloves, and using multiple clean rags to prevent simply pushing the residue around. Wash, rinse, repeat!

2. **Repaint walls with 2 or 3 coats of paint.** If walls are not thoroughly washed prior to repainting, nicotine stains can seep through even multiple layers of paint.

3. **Tear up carpeting and padding, and wash floors** before replacing carpeting.

4. **Replace curtains/blinds/window coverings** to prevent off-gassing of smoke into the environment.

5. **Clean out ventilation ducts and replace filters.** Heating and air conditioning systems recirculate stale smoke in the unit and throughout the building.

6. **Learn more about restoring a smoke-damaged apartment**[8] from restoration experts.

While these steps do not and cannot remove **all** of the potential problems associated with a formerly smoke-filled apartment, it can reduce the thirdhand smoke residue and mitigate some of the off-gassing of tobacco toxins into the environment.

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SAMPLE SIGNS

This is a Tobacco Free Property.

Thank you for observing our policy.

This is a Tobacco Free Complex.

Thank you for observing our policy.

This is a
Smoke-Free
Property
Thank You for
Not Smoking

This is a

Smoke Free

Complex.

Thank you for not smoking.

THANK YOU FOR OBSERVING OUR NO SMOKING POLICY

SMOKING IS PERMITTED IN THIS AREA

Smoking is prohibited within 50 feet of all building entrances

Thank you for not smoking.

Smoking is prohibited within 25 feet of all building entrances

Thank you for not smoking.

Designated Smoking Area

SMOKING PROHIBITED

EXCEPT IN DESIGNATED AREAS

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