DEVELOPING A SMOKING LOUNGE

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Introduction

Managers of businesses and other places frequented by the public are increasingly finding it prudent to establish smoking policies. These policies help prevent conflict between smokers and nonsmokers by clearly defining where people can, and cannot, smoke. With these policies in effect, nonsmokers who may be annoyed by tobacco smoke aren't unwillingly exposed to it. At the same time, smokers go about their business knowing they can smoke in certain areas without offending anyone.

While a lot of attention has been given to places where smoking has been banned entirely, a majority of large private employers have found it possible and preferable to accommodate the wishes of both smokers and nonsmokers.

In some cases, conflict can be avoided by simply letting employees work out differences among themselves. In others, smoking is restricted to private offices and designated areas of cafeterias, lobbies, or other common areas. In still other instances, managers may decide to restrict smoking to designated smoking lounges.

This guide has been developed to offer practical assistance for those who choose to accommodate the needs of smokers and nonsmokers through the use of smoking lounges. Whether retrofitting an existing space or dealing with new construction, following some guidelines will ensure the lounge functions as intended.

Developing a smoking lounge need not be expensive or difficult. In many cases, existing rooms or offices can be converted into a smoking lounge with very little time, effort or money. Smoking lounges can also easily be incorporated into new construction by following a few guidelines.

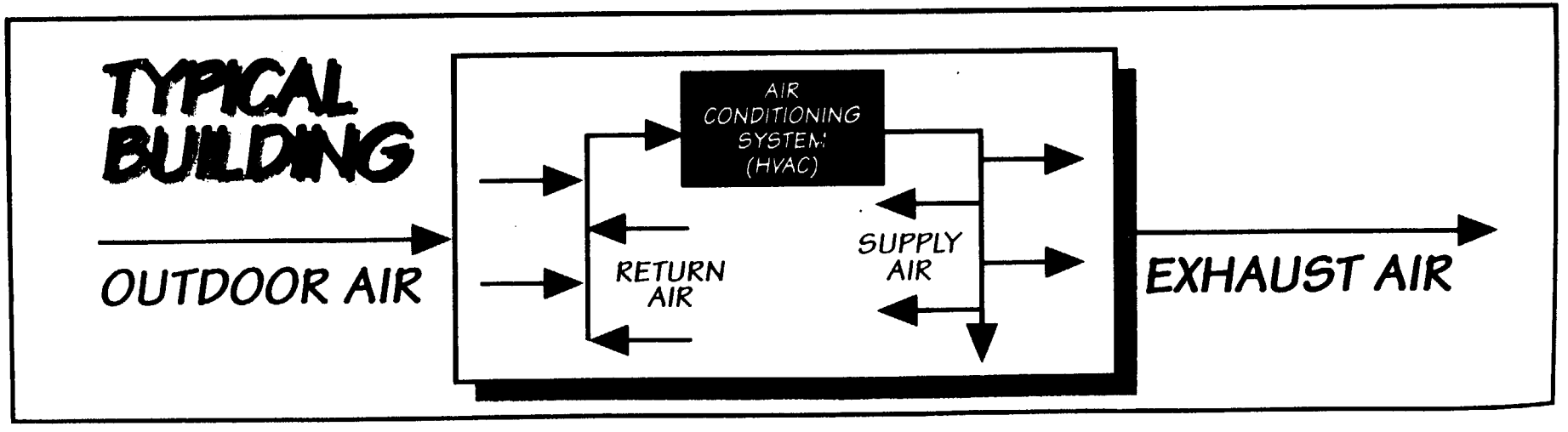
Managers who have made the decision to restrict smoking to smoking lounges can use this guide to achieve several goals: ensure the lounge will satisfy smokers, prevent nonsmokers from being exposed to potential annoyances, and do both at a reasonable cost.

This material addresses some technical aspects of ventilation. Those with a good understanding of heating, ventilation and air conditioning (HVAC) systems may already be familiar with this information. Those with little experience with HVAC systems should gain from this guide a basic understanding of these issues.

Sample floor plans, showing air intakes and exhaust systems, are included in the following pages. Sample renderings of how the lounges might look in use are illustrated, as well. These drawings include a small, simple plan that might be suitable for a relatively small facility or workforce, as well as more elaborate and extensive plans.

This publication is not intended to take the place of qualified, professional assistance. Your best assurance that a smoking lounge will function properly is to enlist the help of a professional who is properly qualified in heating, ventilation and air conditioning systems. A professional engineer and a qualified, reputable mechanical contractor are key to ensuring that HVAC systems meet the requirements of state and local laws and building codes.

- **ASHRAE Standard 62-1989** - A standard entitled "Ventilation for Acceptable Indoor Air Quality" approved and published by the American Society of Heating, Refrigeration, and Air-Conditioning Engineers, Inc.
- **CFM** - An abbreviation for cubic feet per minute, frequently used to describe the volume of air movement per unit of time.
- **Exhaust Air** - The air removed from a space and not reused.
- **HVAC** - Heating, Ventilation and Air Conditioning
- **Outdoor Air** - Air taken from the external atmosphere.
- **Return Air** - Air removed from a space which is then recirculated or exhausted.
- **Supply Air** - The air delivered to the space and used for ventilation, heating, cooling, humidification or dehumidification.
- **Transfer Air** - The air from other indoor areas within the same building.
- **Diffuser** - an air conditioning outlet or grille that is designed to mix and distribute the conditioned air.
- **Contractors** - see Air Conditioning, Heating Contractors or Mechanical Contractors in your Yellow Pages.
- **Engineer** - see Engineers - Professional - Air Conditioning, Heating & Ventilation, Engineers - Professional - Mechanical or Engineers - Professional - Consulting in your Yellow Pages.



How Many Smokers? - One of the first tasks in developing a smoking lounge is to determine how many smokers will use it at any given time. Managers should consult with their employees, determine how many smoke, and consider what policies might be in place regarding use of the lounge.

When Will the Lounge Be Used? - Will the entire workforce be expected to take smoking breaks at the same time, or will their visits to the lounge be scattered evenly throughout the workday? Obviously, you will have to be prepared to handle a larger number of smokers at a single time if everyone will be taking their smoking breaks at one time.

Is the Location Convenient? - In choosing a location, another practical consideration is convenience and proximity to your workforce. It would not make sense to give people a 10-minute break to smoke a cigarette if the lounge is located a five minute walk from their work station. Smoking lounges should be located close to where the majority of smokers work.

In addition, it is possible nonsmokers will voice concerns if the lounge is located far away. It is important that co-workers, smokers and nonsmokers, be able to find each other easily and quickly if the need arises.

Also, lounges located so smokers can enjoy a cigarette and return to their work stations in a fairly short amount of time will help prevent resentment among nonsmokers who may view their smoking counterparts as taking too much time away from their work.

In large companies, building several smaller smoking lounges, and locating them conveniently throughout your facility, may make more sense than trying to make a single lounge serve the needs of all your employees.

Making Sure Smoking Areas Are Functional - Smoking lounges in the workplace can be designed to serve a variety of purposes and to ensure that employees using the lounge for a smoking break will be able to use the time more productively. Again, acceptance of smoking lounges will be greater if the time employees spend there is productive.

To ensure productivity:

- Tables and chairs or counters provide space for people to continue working while in the lounge.
- Telephones, typewriters, computers, or faxes could be provided.
- Racks of current magazines and other literature on your industry can be made available.

Furnishing and Maintenance - Acceptance of smoking lounges will be greater if lounges are pleasantly furnished and well-maintained. They should be well-lit and cleaned regularly. Ashtrays should be heavy, with a large capacity so they won't spill easily and won't have to be emptied too frequently.

Once you have determined how many smokers will be using the lounge at a given time, and identified possible locations, the next step is to select a room of the proper size. The size of the lounge, and number of smokers expected to use it at any given time, are two important keys to determining the ventilation requirements of the lounge.

The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) prescribes recommended ventilation rates for smoking lounges in Ventilation for Acceptable Indoor Air Quality, Standard 62-1989. This standard was developed from a consensus of engineers, architects, chemists, physiologists, product manufacturers and industry representatives. The standard prescribes ventilation rates of 60 cubic feet per minute (cfm), per person, based on occupancies of no more than seven people for every 100 square feet of net occupied space.

For example, a room of 10 feet by 15 feet is 150 square feet. Therefore, the maximum occupancy would be seven times 1.5 (150 square feet divided by 100), or about ten people. Ten people would require a ventilation rate of 600 cfm (60 cfm times 10 people). So, you could accommodate 10 smokers, in a 150 square foot room, with a ventilation rate of 600 cubic feet per minute.

Since this is rather cumbersome to calculate, you might simply refer to Table #1, below. This chart shows the necessary ventilation rate and minimum room size for the number of smokers using the lounge at any one time.

NO. OF SMOKERS	ROOM SIZE (MIN)	VENTILATION RATE
5	7 X 10 or equal to 70 sq. ft	300 cfm of exhaust air
7	10 X 10 or equal to 100 sq. ft	420 cfm of exhaust air
10	10 X 15 or equal to 150 sq. ft	600 cfm of exhaust air
12	10 X 17 or equal to 170 sq. ft	720 cfm of exhaust air
15	12 X 18 or equal to 216 sq. ft	900 cfm of exhaust air
20	15 X 20 or equal to 300 sq. ft	1200 cfm of exhaust air
25	15 X 25 or equal to 375 sq. ft	1500 cfm of exhaust air
30	18 X 25 or equal to 450 sq. ft	1800 cfm of exhaust air
35	20 X 25 or equal to 500 sq. ft	2100 cfm of exhaust air
45	25 X 26 or equal to 650 sq. ft	2700 cfm of exhaust air
50	25 X 29 or equal to 725 sq. ft	3000 cfm of exhaust air
55	20 X 40 or equal to 800 sq. ft	3300 cfm of exhaust air
60	25 X 35 or equal to 875 sq. ft	3600 cfm of exhaust air

TABLE 1

Exhaust and air distribution - In most cases, smoking lounges don't need to have fancy, expensive or sophisticated equipment. In fact, conventional methods of distributing air, in combination with an exhaust fan that vents air to the outside, can be used to properly ventilate a smoking lounge.

A major air conditioning equipment manufacturer has tested several air distribution arrangements for specific use in smoking lounges. The testing was performed under actual conditions, using a full-sized room with smokers to evaluate the acceptability of each arrangement after each test. Analytical measurements were made during and after the tests. Ventilation rates in tests conformed to ASHRAE Standard 62-1989 for a smoking lounge. Again, this standard prescribes 60 cubic feet per minute (cfm) of transfer air (indoor air from other spaces), outside air, or a combination of the two, for each occupant. This air is then exhausted to the outside.

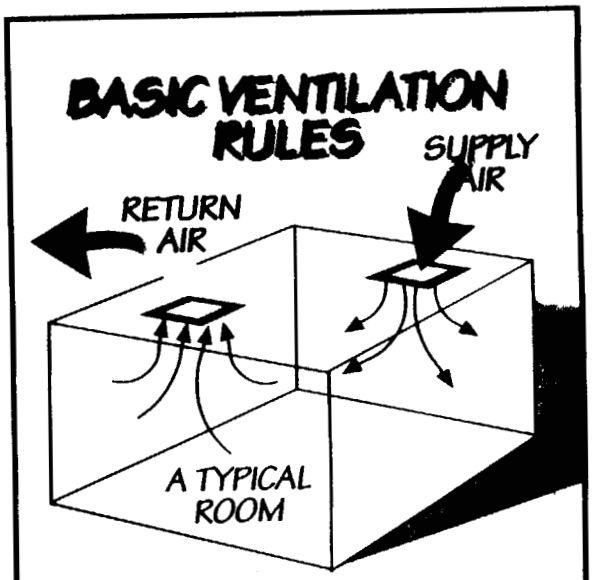
One air distribution arrangement proved to be preferable to others tested, and it had the greatest acceptance by the smokers. This configuration used conventional overhead air supply with air diffusers discharging transfer air toward the walls, away from the center of the room. Transfer air was brought in through the ceiling on one side of the room. An exhaust was located near the center of the room.

This method not only meets ventilation requirements and acceptance by smokers, it also lends itself to a simple and inexpensive retrofitting of an existing space into a smoking lounge.

In addition, this configuration keeps transfer air flowing into the smoking lounge, and smoke-filled air flowing out of the building to the outside. Consequently, nonsmokers in the rest of the building will not be annoyed by tobacco smoke flowing out of the lounge.

Energy Considerations - While the ASHRAE Standard of 60 CFM per smoker is listed as *"Outdoor Air Requirements"* there is a comment "Normally supplied by transfer air." Do not be misled that 60 CFM of outdoor air is required because in most cases it will be more economical to rely on transfer air.

Air brought in from the outside will have to be conditioned or heated, thus potentially increasing your energy costs. Transfer air has already been conditioned or heated, and will meet the ventilation needs of the lounge perfectly well.



In order to cool or heat a room a certain volume (cfm) of SUPPLY AIR is blown in by the Air Conditioning System. A corresponding amount (cfm) of RETURN AIR moves out of the room back toward the Air Conditioning System.

IN GENERAL
CFM supply air = CFM return air

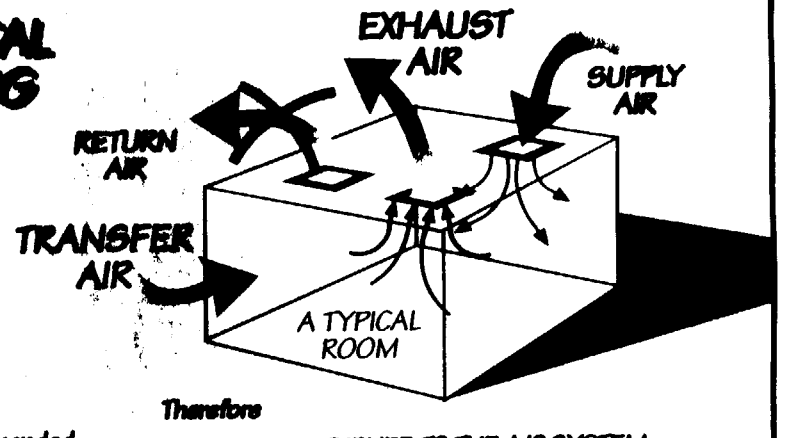
An existing room can be converted into a smoking lounge by installing a properly sized exhaust fan. When choosing a location for a smoking lounge, remember modifications needed for the exhaust will be easier if the room is located on or near an outside wall.

Since all the air that leaves the room through the exhaust fan must be replaced, care should be taken to make sure a source of indoor air from other spaces (transfer air) is provided to the room. Several approaches can be used:

- the entrance door to the room could be undercut to allow air to enter the room (typical for a room with an exhaust rate of 120 cfm or less).
- a grille could be installed in the entrance door to provide the transfer air (a 1 foot by 2 foot grille could be sufficient with an exhaust rate to 750 cfm).
- a grille could be installed in the walls if the walls are open to other parts of the office area.
- a duct could be installed above the ceiling to bring transfer air from other spaces (this is more likely in a lounge designed for 15 or more people).
- in a superior layout, as illustrated on page 15, transfer air could be combined with supply air using a fan-powered Variable Air Volume (VAV) box.

Many other methods could be used, but it is important to consider how the air is supplied to the space and to ensure adequate transfer air for the exhaust fan to function properly.

TO CONVERT TYPICAL ROOM TO SMOKING LOUNGE



Step 1: Block off or disconnect the RETURN AIR

Step 2: Verify the amount of SUPPLY AIR for cooling the number of people who will be using the room. Increase or decrease if necessary.

Step 3: Add exhaust fan for recommended EXHAUST AIR CFM.

Step 4: Ensure availability of TRANSFER AIR.

IN GENERAL
CFM RETURN AIR = 0
CFM EXHAUST AIR =
CFM SUPPLY AIR + CFM TRANSFER AIR

Therefore

- NO AIR IS RETURNED TO THE A/C SYSTEM
- CFM EXHAUST AIR IS DETERMINED FROM TABLE 1
- CFM SUPPLY AIR IS AMOUNT REQUIRED TO COOL THE ROOM (MUST BE CALCULATED BY ENGINEER OR CONTRACTOR IF NUMBER OF PEOPLE USING THE ROOM IS DIFFERENT THAN EXISTING USE)
- CFM TRANSFER AIR IS THE DIFFERENCE IN CFM EXHAUST AIR AND CFM SUPPLY AIR

Cost Considerations

Smoking lounges can usually be established with minimal expense and effort. The additional costs to change your HVAC system as recommended in this document should fall in the range of $150 to $400 per person using the lounge, based on maximum capacity.

For example, costs for a 15 by 10 foot smoking lounge, with a capacity of up to 10 people, would probably range from a low of $1,500 to a high of $4,000.

Smoking lounges serve the needs of both smokers and nonsmokers. Morale among both groups may improve if conflicts are avoided by the use of a smoking lounge. If you have a workforce of 100 people, and can meet the needs of your smoking employees by building a lounge which can accommodate ten smokers at one time, the actual cost of developing the lounge could be as low as $1,500, or $15 per employee.

The only way to determine actual costs is to identify the number of people who need to be able to use the smoking lounge at any one time, identify potential locations, put a plan together and cost it out. A variety of factors may impact the cost. These include the type of building (high rise, low rise), type of HVAC system, distance from the lounge to the outside, local codes (urban, suburban), and local construction cost factors.

Common Pitfalls Leading to Poor Ventilation

- To ensure that smoke from the lounge doesn't drift into other parts of the building, care should be taken to ensure that the lounge remains at a negative pressure relative to surrounding areas. To accomplish this the capacity (CFM) of the exhaust fan system must exceed the amount (CFM) supplied to the room by the supply air system so that some of the transfer air can come in through the doors or other openings into the room. The capacity (CFM) of the exhaust fan system should be at least 10% greater than the supply air (CFM).

- The system must be properly installed. Installation problems can include:

  - Undersized duct run over long distances (20 or 30 feet).

  - Installing flexible duct intended for clothes dryers rather than proper ventilation ductwork.

  - Improper routing such that ductwork does not exhaust outside the building.

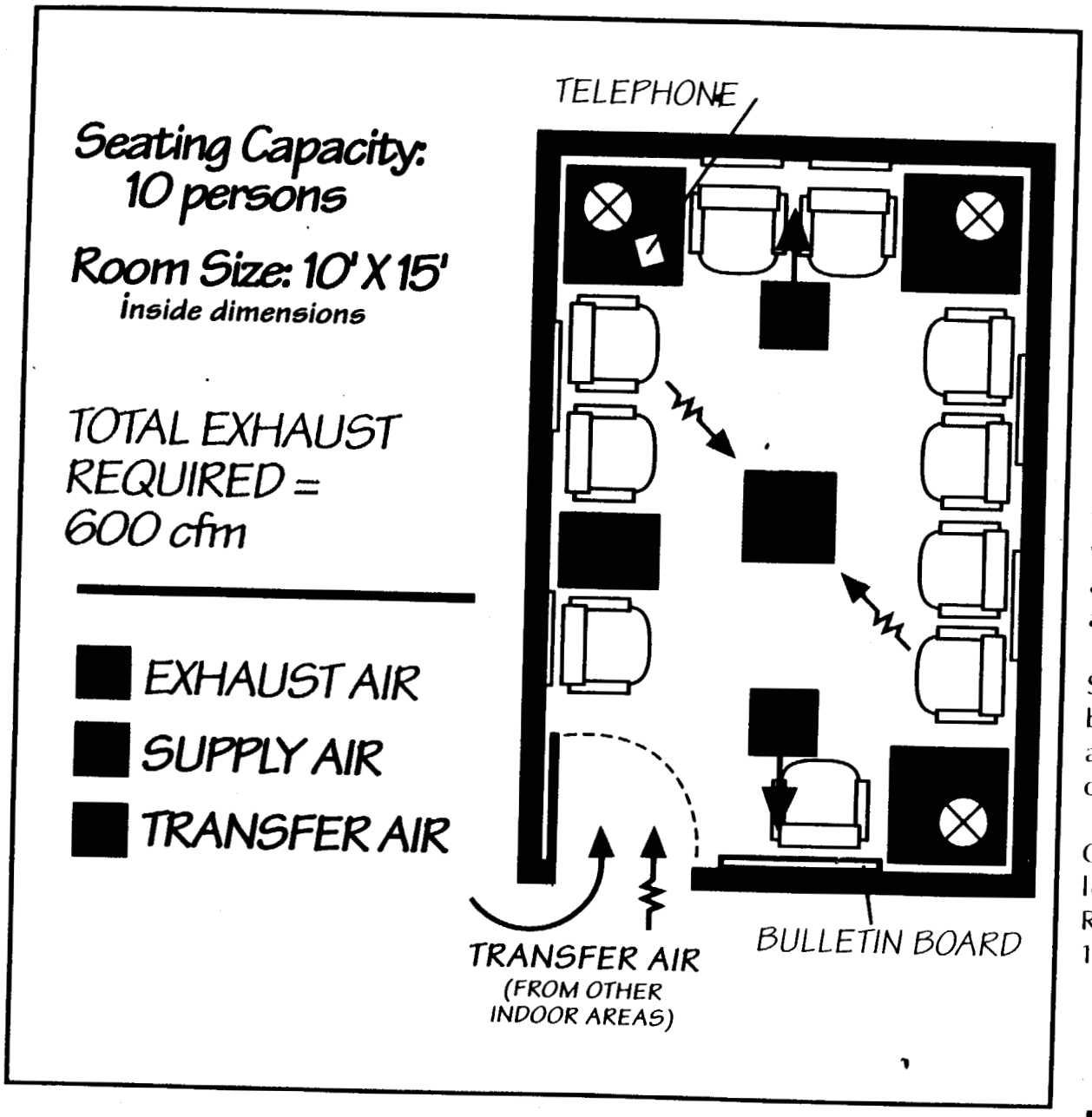
  - Leaks in duct due to improper sealing of joints

- After installation of the system, testing should be performed by qualified professionals in order to ensure that the system is working properly. This activity is called "test and balance" in the HVAC industry.

Sample Design One

On these and the following pages you will find sample designs for smoking lounges. These are only examples of approaches you might take.

Sample Design One shows a lounge intended to accommodate up to 10 smokers at any one time. Illustrations show two different approaches to furnishing the lounge. One uses tables and chairs, the other countertop workspaces and stools.



This design, however it is furnished, would work well in many facilities where a relatively small number of people will be using the lounge, or where several lounges will be located throughout a large facility.

Sample Design Two (on pages 12 & 13) shows a larger lounge, one which can accommodate up to 25 people.

Sample Design Three (on pages 14 & 15) shows a much larger lounge, such as might be developed in a warehouse, factory, or distribution facility with a large workforce. This smoking lounge could also function as a lunch room or seating area for a company cafeteria.

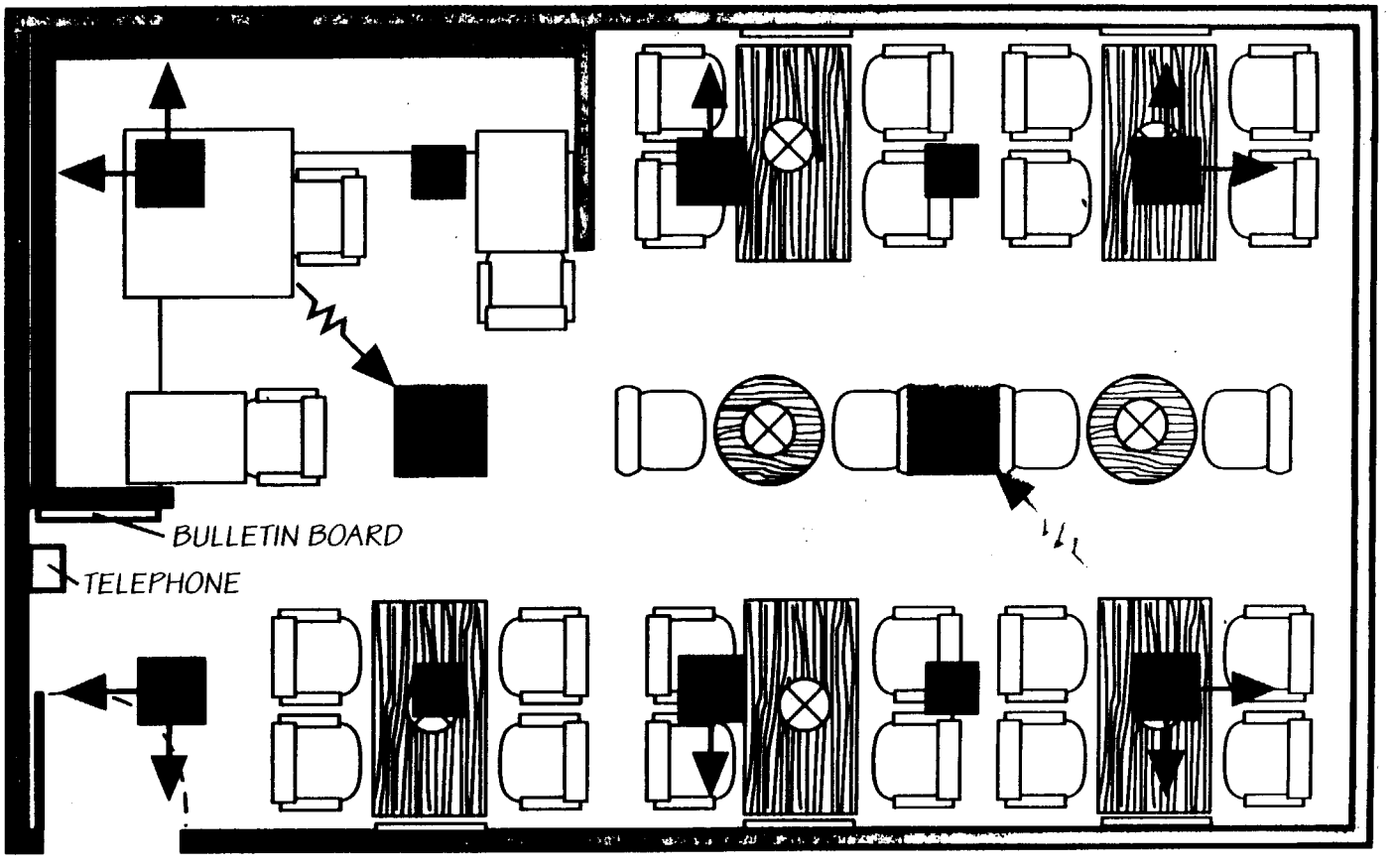
Smoking lounges can be as elaborate or as basic as you wish to make them. The approach which works best will depend on your individual situation.

Questions about developing a smoking lounge can be directed, toll-free, to R.J. Reynolds "Business Watch" at 1-800-862-2525.

Sample Design Two

Seating Capacity:
31 persons

Room Size:
17' X 28'
inside dimensions



TOTAL EXHAUST
REQUIRED = 1,860 cfm

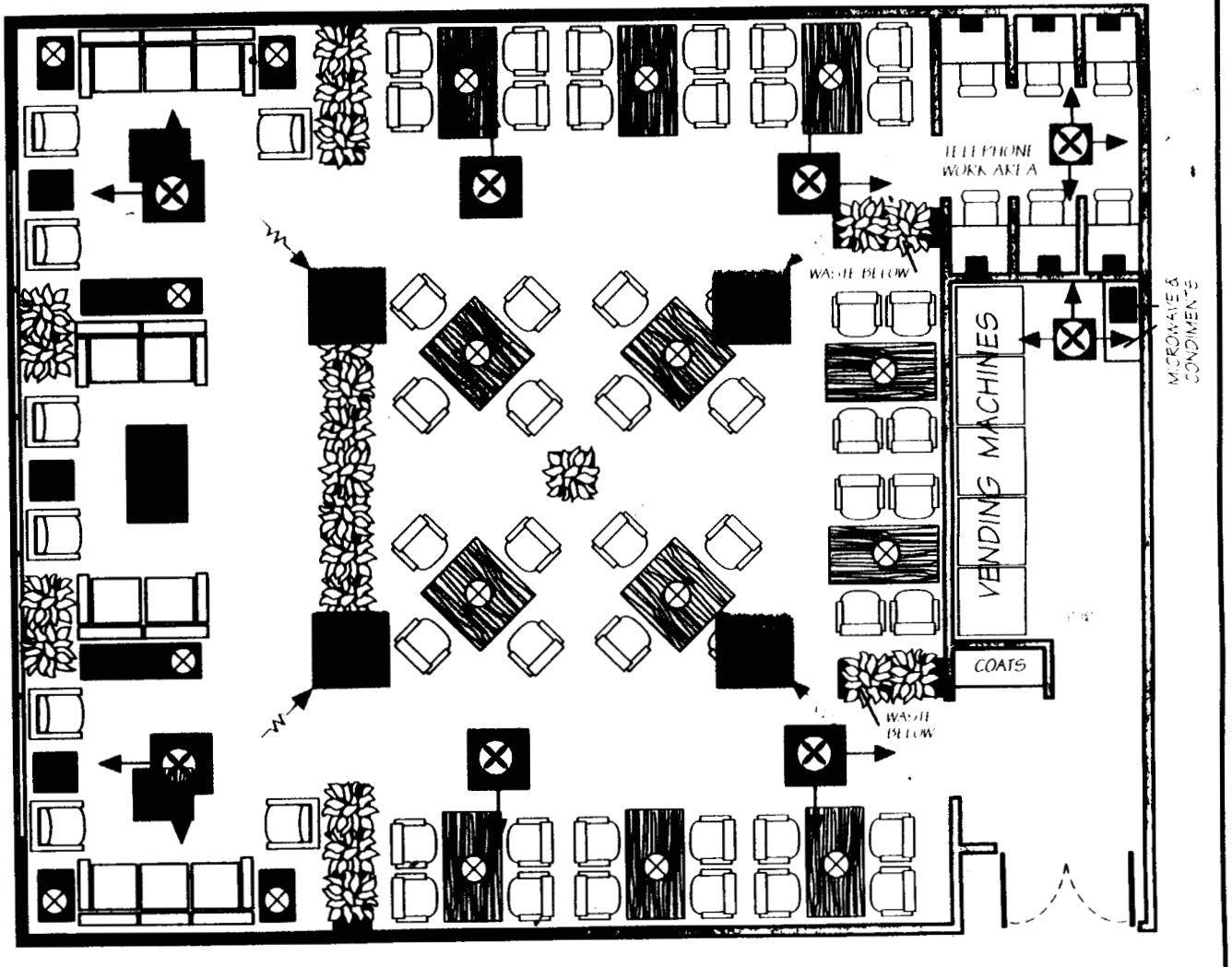
EXHAUST
SUPPLY AIR
TRANSFER AIR

Seating Capacity:
66 persons

Room Size:
46' X 37.6'
inside dimensions

TOTAL EXHAUST REQUIRED = 3,960 cfm

■ EXHAUST AIR

⊗ SUPPLY AIR & TRANSFER AIR

A fan powered box can be used to combine supply air and transfer air. This method will give superior control of the environment.