



WINE SHOWCASES

Wine storage displays incorporated into the interior design of residential and commercial spaces.

Modern Technology

has made it possible for wine aficionados to store their prized collections at home in pristine conditions.

Traditional wine storage started in cellars, was often made of wood, and varied in size. In recent years, spaces devoted to wine have come out of basements and are being incorporated into the interior design of residential and commercial spaces.

A wine wall is a collection of bottles typically displayed behind a climate-controlled enclosure, and it's the latest in long-term wine storage trends that Wine Guardian is particularly excited about. Applications comprise one or more glass walls with metal, wooden or acrylic racks that can house large or small collections—all of which result in dramatic focal points for any space.

Wine displays delineate rooms in homes or places of business and have become an essential design element used to add elegance and ambiance to an open concept room. They are also terrific opportunities for wine lovers to showcase their prize vintages or to create a dedicated wine space in smaller homes or condos where a full cellar is not feasible. These elegant spaces provide a functional solution for storing and displaying wine and cost a lot less than wine cellars and full wine rooms.





Despite the myriad of ways to design the aesthetics of a wine display, it is equally important to find the right solution to cool the space and maintain a stable environment. Wine Guardian is firm in its belief that your designer and architectural engineer should be on a first name basis even before selecting a cooling system to meet your needs. When they work closely together, they are far less likely to miss critical details and specifications that affect cooling unit sizing and installation.

CONSTRUCTION MEETS INTELLIGENT DESIGN

Wine walls are comprised of between one and four sides of glass and a drywall ceiling. The space can be between 12 inches—one bottle—deep and up to two feet, maximum. The glass and non-wooden materials lend themselves to a clean, modern look and are appealing because of the bold statement they make. Beyond a contemporary style, a wine display must be able to maintain 50 to 70 percent relative humidity and a consistent temperature set point between 55 to 58 °F (12 to 14 °C) . A well-built enclosure will ultimately result in a closed system that is ideally suited to aging and storing wine. Design must meet function.

Displays are often found in the center of a space and impart ambiance or create a sense of privacy by dividing rooms. A wine wall may separate

residential living and dining rooms or create intimate sections within a larger restaurant or hosting area. Smaller residential spaces, townhomes, and apartments can be more difficult to configure, but advances in cooling technology and installation options make wine displays possible in most homes.

A perfectly designed, placed and constructed wine application means little without a complementary wine cooling unit. The primary challenge in regulating wine walls is directing air into and out of the enclosure, without noisy or unsightly HVAC equipment spoiling the experience. This is no small feat, which is why it is imperative the cooling technology is integrated into the design process.

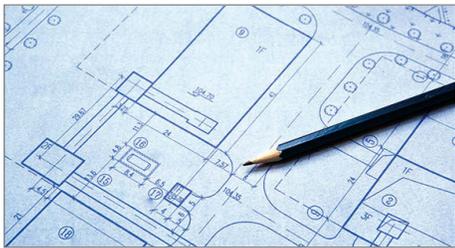


SELECTING THE RIGHT COOLING UNIT

There are several key factors to consider before selecting the appropriate cooling unit for your application.

SIZE OF SPACE

The size of the wine wall determines the required cooling capacity, which generally range from just over 1,000 BTUs per hour to 15,000+ BTUs per



hour for very large glass wine showcases that are accessed frequently in hot climates. Wine Guardian and many general climate control experts offer heat-load calculators that provide guidelines to help you get started, based on your specifications. But be sure never to select a cooling unit based exclusively on the volume of the wine display wall, since that will omit other critical considerations.

VOLUME AND TYPE OF GLASS

An application with four glass walls calls for more ingenuity to conceal the cooling unit and may be more challenging to keep cool than one with two sides of glass. Moreover, the type of glass used will also impact proper unit sizing. A wine wall comprised of plate glass will require a cooling system that offers more capacity than a display comprised of insulated glass.



AMBIENT TEMPERATURE

We already know that 55-58 °F (12-14 °C) is the optimal temperature for long-term storage of wine. If your wine display is surrounded by a room regulated at 80 °F (27 °C), you will require more cooling capacity than a room kept at 70 °F (21 °C)—even if all other factors are equal. Cooling units that are “too small” (lower capacity than the wine display requires) may run excessively and lower the relative humidity too much, while systems that are “too large” (much more capacity than the wine display requires) may cool the space very quickly but keep it from being dehumidified properly.



SECONDARY CONSIDERATIONS

- Every time a display door is opened, the pristine climate is disturbed. Wine walls in restaurants are likely to be opened multiple times per day, while the air in home wine displays will be disturbed far less often. The right cooling unit will be able to restore balance quickly.
- An exterior-grade door and properly sealed threshold will preserve the environment.
- Direct sunlight and intense heat also jeopardize the stability of wine and might be a reason to rethink the placement of an application.
- Commercial wine showcases and any wine display in an area with heavy foot traffic should incorporate racking systems that are impervious to vibrations. Vibration disrupts the aging process in wine.
- Fogging impacts both restaurants and private homes, but can be remedied through a cooling unit that does not circulate air directly onto glass surfaces.

HUMIDITY

Wherever you are storing wine long term, humidity is a factor. Too much of it can cause mold and glue on labels to break down. Too little humidity can result in cracked corks, which leads to evaporation and degraded wine. Standard HVAC systems (including wine cellar cooling units) can remove humidity during their normal function, but cannot add humidity back. While effective door seals help ward off humidity issues, a cooling unit with built-in humidity control is necessary to increase humidity levels—especially in drier geographic areas and during certain times of year.



LIGHTING

Lighting is a key factor in determining the correct size of a cooling system. Lights in commercial spaces are often on, whereas at home they are generally kept off. Lights generate heat, which means your wine display may need a cooling unit with more capacity to compensate for the added heat.



HOT AIR RISES

Part of selecting the just-right unit for your application is knowing where to put it. Since hot air rises and cold air falls, the ceiling is the best location for your system. If cool air is being pushed in through the base of the wine wall, only the lower half gets conditioned. This means the bottom half of your wine wall might be at the optimal aging and storing temperature, while the top half is five to ten degrees warmer.



Similarly, temperature and humidity sensors should be placed in the return, which will yield a true representation of the air coming back to the wine cooling unit.



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Expect versatility from a standard unit

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While each wine wall's parameters might be unique, we at Wine Guardian believe a standard cooling system should be robust enough to meet even complex needs.

For instance, a restaurateur might envision a single wine wall designed to maintain a cool 45° F (7° C) reserved for serving white wines at consumption temperature, which requires a system with an extended temperature range. Or, a builder may have very limited horizontal space to install a system and requires a vertically orientated ducted system for the wine display. Wine Guardian offers standard cooling units for each of these scenarios. Furthermore, manipulating air is not always a seamless process even in well-thought out spaces. It can be challenging to exhaust air in smaller applications—such as most wine displays—or in applications with a lot of glass. These applications require a cooling system that allows builders to connect ductwork in a variety of configurations. A unit with exchangeable panels makes it easy to customize ductwork, while still being able to access both the refrigeration and electrical panels.

In some spaces, having any ductwork to direct air can be a challenge. If the building has access to year-round water sources with consistent temperatures, water-cooled systems—versus typical air-cooled systems—eliminate the need to exhaust hot air. It is also possible to place a fan and cooling coil directly in a ceiling above certain wine environments, enabling the supply and return to move between a single discreet grill, thus eliminating the need for any ductwork. This scenario is especially appealing when space is limited and there is nowhere else to house the mechanicals. In a nutshell, there are many standard ways of doing things, but each wine wall application is highly configurable. As long as your designer and builder are on the same page from conception to execution, an elegant, efficient wine wall is at your fingertips. Wine Guardian is excited about the continuing evolution of long-term wine storage and creating wine conditioning units that make wine displays accessible to even more wine lovers.



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