Liebert® LPC™ Safeguarding Archive Gallery

A Vertiv Case Study



About the Customer

A well known financial institute in Philippines, has made its mark not only as expert financial advisors but also as a corporate art patron.

Their foundation wing acquired over 900 works of art through acquisitions. The collection has the distinguished inclusion of paintings by 19th century master Juan Luna and first Filipino National Artist Fernando Amorsolo, along with other leading artists of the 20th century.

The selection of art piece shows how the themes of harmony, abundance, and resiliency abound in works depicting the values and dreams of the Filipino—family, community, tradition, and home.

Hence, the corporation has taken great step toward the preservation of these valuable artwork in their archive. And to do so archive environment must be kept apt with the art gallery's preservation standards.

Challenges

- Relative humidity is the key factor in archives; and the primary challenge was to maintain the relative humidity of the archive within very close tolerance i.e. +/-2%.
- Another challenge was to keep the moisture under permissible limit during load variation i.e constant indoor condition during lower load condition even at zero load. Moreover, archive gallery expose to very low heat load level, and sensible load of not more than 70~80%.

Case Summary

Location: Philippines

Critical Needs:

- Constant temperature: 21°C +/- 0.5°C
- Constant Relative Humidity (RH): 45% +/- 2%
- Maintain uniform temperature & relative humidity in large room
- Constant indoor environment during load fluctuations

Vertiv™ Solution:

Offered five (5) units of 15kW capacity of Liebert® LPC in (2 Working mode + 1 Standby) configuration. LPC is distinctly designed to handle wide load fluctuation and maintain constant operating conditions.

Results:

- Entire Liebert® LPC™ units along with accessories have been successfully implemented by Vertiv team; LPC™ units were found to be maintaining committed relative humidity with tight tolerance. Customer has certified that the indoor condition of Archive Gallery was found to be favorable for art collections.

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Project Brief

Typical Archive indoor environment requirement:

- **Load Profile:** The archive comprises latent load, and considerably less sensible heat load compare to standard equipment room. Even at times, the sensible cooling capacity mitigates to zero point during non-peak hours.
- **Challenges:** Maintaining and modulating the sensible load without switching off the cooling unit. Maintain strict and firm control of temperature and relative humidity along with a narrow tolerance band, and low air velocity (and variable air flow in some conditions)
- **Pre-requisite parameter:** Temperature & relative humidity+/-0.5°C & +/-2% RH respectively along with load modulation.

The Solution

- Team Vertiv conducted a thorough study of the different loading condition and noted the stringent need of inside environment, also studied the load pattern and bandwidth of load fluctuation.
- Application team carried out heat load calculations with recent & the past data of three major seasons (summer, winter, monsoon) and suggested a distinct solution that can solve customer concern. Post thorough analysis of finding, team Vertiv has offered 5 units of 15kW capacity of Liebert® LPC™. These 5 units were deployed in a large and a small room. Large room comprises of three units- two in working mode and other unit in standby mode.
- Liebert® LPC™ unit has been designed to handle highly sensitive indoor condition and to maintain condition in indoor environment. A set of site preparation guideline has also been handed over to the customer.
- Finally, Team Vertiv has installed & commissioned the LPC units as per the agreed site layout. And also, consulted customer on the requirement of additional accessories and room layout designing such as air distribution etc.

Why Liebert® LPC™

Liebert® LPC™ is uniquely designed to cater the needs of special applications. It is equipped with advanced control system that maintains close band of temperature & relative humidity with the help of latest inverter based scroll compressor, green refrigerant, heater, humidifer, EEV, EC fan etc., as the major integral parts. In a state-of-art test centre equipped with various climate chambers and customized environment conditions is utilized to conduct diverse range of tested on LPC units.

This, coupled with availability of wide range of product lines and decades of experience of team Vertiv in designing and building the mission critical facilities for diverse range of applications and segments.

Finally, the field reports and the operating conditions advocated that an extraordinary value has been added to the Archive gallery, which will certainly help to preserve the art collections at the gallery

For more information on the Liebert® LPC™ and other solutions, please visit **www.Vertiv.com**



Liebert® LPC™

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Today's Precision Equipment

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