# Smart Interior Designs for Sustainable Workspaces: Insights from Shop-Lot Offices in Tropical Regions

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## Abstract

This chapter investigates the ability of smart interior designs to enhance the sustainability of shop-lot offices in tropical regions. Shop-lot offices, which are a prevalent architectural typology in tropical regions, present unique design challenges, such as high temperatures, humidity, and reliance on air-conditioning systems. A thorough systematic literature review was conducted to examine how smart interior design principles, such as adaptive lighting, intelligent climate control, biophilic integration, and sustainable materials, may mitigate these challenges while increasing energy efficiency and occupant comfort. This chapter also examines the intersection of technology and interior design by exploring strategies that leverage on locally available resources, passive design

solutions, and digital innovations to create shop-lot offices that are resilient and sustainable. Special attention was paid to the cultural and functional requirements of shop-lot offices, including their role as multipurpose spaces for commerce and administration. Case studies and insights from tropical regions were used to develop a contextual framework with which to identify best practices and gaps in extant design approaches. By highlighting the correlation between interior design, technology, and environmental responsiveness, this chapter aims to guide interior designers, architects, and policymakers on adopting smarter, more sustainable solutions for shop-lot offices. It concludes by outlining recommendations for future research and practical implementation, emphasising the critical role of interior design in driving sustainability at shop-lot offices in tropical regions. 

## Author keywords

Climate-responsive design; Shop-lot office typology; Smart interior design; Sustainable workspaces; Tropical climates

## Indexed keywords

**Engineering controlled terms**

Air conditioning; Architectural design; Ecodesign; Energy efficiency; Environmental technology; Interiors (building); Sustainable development; Tropical engineering

**Engineering uncontrolled terms**

Architectural typologies; Climate-responsive design; Design challenges; Interior designs; Responsive designs; Shop-lot office typology; Smart interior design; Sustainable workspace; Tropical climates; Tropical regions

**Engineering main heading**

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