

ENHANCING THE BOTTOM  
LINE – IMPROVING THE  
INDOOR ENVIRONMENT  
FOR HEALTH AND  
PRODUCTIVITY

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# INTRODUCTION

Why investigate the benefits of  
plants in the workplace?

A review of international scientific research  
presented at the Plants for People symposium,  
Floriade 2002, The Netherlands



## **THE EFFECTS OF HEALTHY WORKPLACES ON THE WELL-BEING AND PRODUCTIVITY OF OFFICE WORKERS**

- WORK RELATED STRESS IS ONE OF THE MOST IMPORTANT THREATS TO WORKERS' WELLBEING
- CHANGING WORK PATTERNS
- DOWNSIZING, OUTSOURCING, SUBCONTRACTING, GLOBALISATION



## PRODUCTIVITY AND INDOOR PLANTS **Netherlands study -**

- IMPROVED WELL-BEING AND  
WORKPLACE QUALITY
- >4 HOURS IN FRONT OF VDU -MORE  
PRODUCTIVE
- AVERAGE PRODUCTIVITY INCREASE  
12%

## **HEALTH AND WELL- BEING AND INDOOR PLANTS**

### **Norwegian study-**

- 37% REDUCTION IN COUGHING
- 30% REDUCTION IN FATIGUE
- 23% REDUCTION IN DRY THROAT,  
DRY SKIN
- OVERALL 23% IMPROVEMENT WITH  
PLANTS



## **RADIOLOGY DEPARTMENT**

- 45% REDUCTION IN HEADACHES
- 32% REDUCTION IN FATIGUE/HEAVY-HEADED
- 22% REDUCTION IN DRY THROAT
- 21% REDUCTION IN DRY /ITCHING SKIN
- 25% OVERALL IMPROVEMENT WITH PLANTS

## **RADIOLOGY DEPARTMENT**

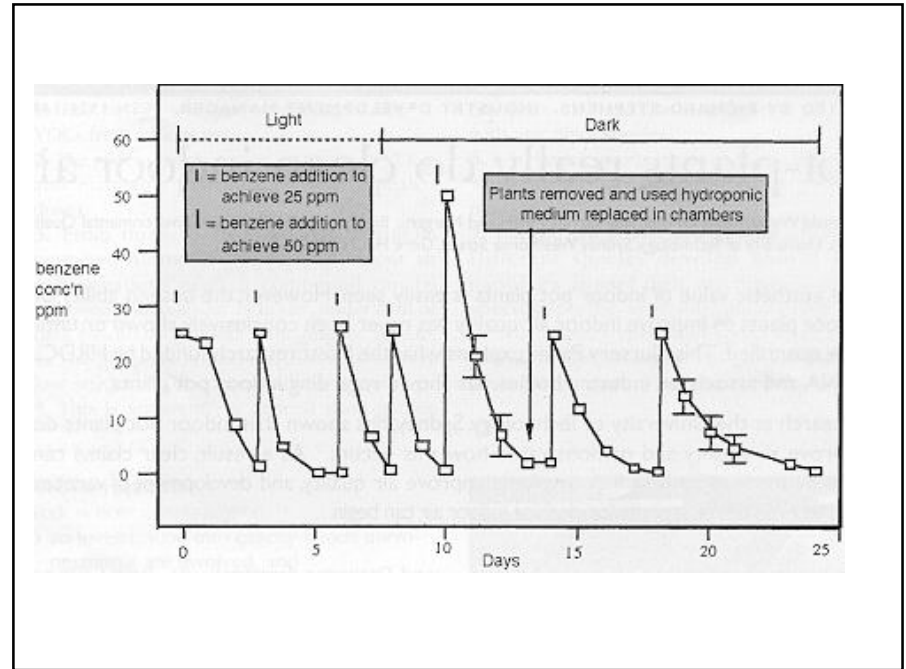
- DECREASE IN SICK-LEAVE FROM USUAL 15% TO 5% – A MORE THAN 60% REDUCTION
- DECREASED RATE MAINTAINED OVER 5 YEARS WITH PLANTS RETAINED

## INDOOR AIR QUALITY AND PLANTS

### **Why worry about indoor air?**

- VOLATILE ORGANIC COMPOUNDS (VOCs)
- EFFECTS ON HEALTH, ABSENTEEISM AND PRODUCTIVITY
- SEVEN SPECIES TESTED IN DETAIL





## INDOOR AIR QUALITY AND PLANTS

- **SIGNIFICANT AND CONTINUOUS REDUCTION IN VOCs**
- **THE SYSTEM GETS BETTER ON EXPOSURE**
- **REMOVES VERY HIGH AND VERY LOW CONCENTRATIONS**
- **WORKS AT THE SAME RATES DAY OR NIGHT**



## HEALTH BENEFITS OF GARDENS IN HOSPITALS AND HEALTH CARE FACILITIES

- **SIGNIFICANTLY AMELIORATES STRESS  
WITHIN 5 MINUTES**
- **IMPROVES CLINICAL OUTCOMES -  
REDUCING PAIN MEDICATION AND  
SHORTENING HOSPITAL STAYS**
- **SIGNIFICANTLY HEIGHTENS  
SATISFACTION WITH HEALTHCARE  
PROVIDER**





## ENHANCING THE RETAIL SHOPPING EXPERIENCE

- **DO CONSUMERS PREFER CERTAIN PLANT CONDITIONS IN RETAIL SETTINGS?**
- **DOES THE PRESENCE OF TREES INFLUENCE CONSUMER PLACE PERCEPTIONS?**
- **DOES THE PRESENCE OF TREES HAVE AN EFFECT ON CONSUMER BEHAVIOUR?**

## ENHANCING THE RETAIL SHOPPING EXPERIENCE

- **80% IMPROVEMENT FOR AMENITY AND COMFORT**
- **30% IMPROVEMENT FOR QUALITY OF PRODUCTS PERCEPTION**
- **POSITIVE CONSUMER PERCEPTIONS**





## **GREEN SOLAR ARCHITECTURE**

- 50-80% ENERGY REQUIREMENTS FROM SOLAR
- INDOOR AIR TEMPERATURES 2-3 DEGREES LOWER IN SUMMER
- POSITIVE PERCEPTIONS
- REDUCED ABSENTEEISM



## **SUMMARY**

- HEALTH CAN BE A KEY INGREDIENT OF BUSINESS EFFICIENCY AND COMPETITIVENESS
- AN INVESTMENT IN INTERIOR PLANTSCAPING CAN YIELD MANY TIMES ITS WORTH

**SUMMARY  
INDOOR PLANTS AND  
PLANTSCAPING  
IMPROVE:**

- WORKER'S HEALTH AND WELL-BEING
- OFFICE PRODUCTIVITY
- BUSINESS PROFIT ABILITY

