

# **The Psychological Effects of Plants on People in Office (or other indoor setting)**

**Research conducted by Surrey University**

Two studies were conducted by M.Sc. environmental psychology students from Surrey University during the spring and early summer of 1997. The experiments were designed to examine the effects of plants on people in a simulated working environment.

## **Study 1: The Effect of Interior Planting on Stress by Helen Russell**

The first study attempted to test whether the presence of plants in a room affected the stress levels of people undertaking a complex test. Participants in the study were invited to an office that had no plants or was heavily planted. Sensors were attached to the skin of the participants to record skin conductivity, heart rate and blood pressure. The participant was allowed to get used to the surroundings for 10 minutes, during which time a base line recording of his stress levels was recorded. After this 10 minute period, the participant was asked to add up a list of 78 numbers without using his fingers or counting aloud. During the time they were allowed for the test, additional distractors, such as the sound of a ringing telephone or traffic noise, were played to them at random intervals. After the test, a further 10-minute period of rest was allowed.

This study was an attempt to find objective measurements of what was already widely perceived, namely that plants in offices can reduce stress. Of the three types of measurements made, skin conductivity showed the greatest difference between the group

exposed to plants and the group in the unplanted office. The results showed that, for this measurement, stress was reduced in the planted office. The other tests showed very little difference between the two situations. The results also showed that those people in the planted office recovered from their stress more quickly than those in the unplanted office during the 10-minute post-test rest period.

The reasons for the difference between the groups were also discussed. It is thought that the presence of plants made the office more interesting. A comparison with other decorative objects in an office would have to be made to see whether there was something inherently special in plants that has an effect on perception.

The effect of plants on stress may well be small and not apparent in those situations where the task performed is especially complex. In these situations, a person will be concentrating so much on the task in hand, that the surroundings make little impact. However, in situations where the task being performed is less complex or boring, the soothing effects of plants may be more noticeable and have a greater effect on the people doing the task. This could be the subject of further study and may have implications on workplace productivity.

## **Study 2: Human Responses to Office Interior Planting by Matthew Hampshire**

This study examined the levels of plants needed in an office to evoke a response. The experiments tested a hypothesis that said as interior planting presence increases, so will the positive perception of that space up to an optimum level. An office was furnished and plants were positioned in the office at six different densities, ranging from zero to very heavily planted. The room was photographed at the different densities so that each incremental increase in plant density was approximately 6 percent greater than

the previous in terms of the area of the photograph containing plants.

The photographs were shown to a group of individuals, who were asked several questions about the pictures they saw.

First, participants were shown a picture for 30 seconds, after which they were asked to recall the objects other than plants in the picture. The results of this experiment suggest that planting density had no significant bearing on short-term recall.

The second test was an examination of the perception of the office at the various planting levels. Participants were asked to judge the office using bipolar adjectives. This means that participants were asked to score the room on a scale of one to seven for each pair of opposite adjectives, such as friendly and unfriendly or complex and simple. Eighteen such pairs of adjectives were chosen for the test. The results showed that, generally, the positive perception of the office increased as plants were introduced.

The final test asked participants to rank the photographs in order of preference. The clear result from this experiment showed an aversion to the unplanted room, whereas the preference for the other planting levels was less obvious. Very dense planting levels were disliked, as it was thought that such high levels of planting might make the office impractical to use. The results suggest that the arrangement of the plants in the office may have a dramatic effect on perception independent of the quantity of plants. The introduction of a dominant trough into the scene had a disproportionate effect on perception for the increase in plant density it caused.

This study demonstrated a positive perception toward plants in an office, although it is hard to extract the reasons for such perceptions. Further work on this is required to find out what it is

about plants in offices people like and whether good design of plant displays is as important as the number of plant in an office.

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