

# Design Research of Augmented Realty Plant to Depressurize on Office Ladies

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**Abstract.** Melancholia is regarded as one of the three major diseases by World Hygiene Organization of United Nations. By using two stage questionnaires with virtual plant (named Green Point) design, research focuses on what is the office lady pressure comes from and what product could release her stress? The result reveals that career women have the positive evaluation in the aspect of degree of satisfaction of virtual plant. Being asked for which virtual planting tension-relieving product design style is more likeable, career women prefer pure fashion and lovely look, and have a deep impression on nature and creativity.

**Keywords:** Adaptive and augmented interaction, Augmented Realty, Depressurize, Office Ladies.

## 1 Introduction

With the advent of the 21st century, the social pattern changes, many of Psychiatry Branch confirmed the growing popularity of depression incidence. Research project of the National Science Council in suicide cases tracking study plan, proposed that Taiwan's suicide rate has been the highest people mortality rank 9 [1].

Depression is one of the risk factors for suicide attempts [2]. Depression incidence between the ages of 25 to 54 on women is higher than men. The probability to get it of a woman is lifetime rate of a quarter. Traditional family life as the main women, a lot of time in life was beginning to bet on the workplace. Female office workers at the same time play the role of multiple changes. The workplace, the family, and the social pressure is relatively derived with heavy physical and mental load pressure causes diseases of civilization. It causes a great negative impact in the daily life. Therefore, the working women living pressure control with physical and mental adaptation should not be ignored.

Based on the release pressure, the research focuses on:

1. What are female office workers diastolic pressure elements and expectations of demand for the use of the product?
2. Could virtual plant be the good product to release pressure for them?

## 2 Literature Review

Many researchers have proposed different angles for pressure [3, 4]. Working pressure is undue pressure or burden occupational, and seriously affects the work pressure by psychological and physiological condition due to the competitiveness of the too fast social rhythm [5]. In organizational behavior earliest practical use of scientific methods to verify the pressure by Seley put forward his earliest word "pressure" to introduce in the field of social sciences, that pressure is an unexpected reaction to any demand [6]. Working pressure is physically expected that workers to adapt to the working environment or psychological requirements triggered reaction [7].

Ivancevich and Matteson believe that stress is an adaptive response, and such a reaction is a result of the event for personal special psychological or physiological requirements, personal qualities as an intermediary [8]. By many scholars of different pressure angle, it is stated that the importance of the pressure relieve pressure response may be facing not suited, and we should avoid the pressure to produce the damage done.

By Japan's Hakuhodo Institute, for everyday life, the pursuit of small and possible changes desire in mood, men and women are different [9].

## 3 Methodology

Two-stage survey is applied. First stage of the investigation is to understand the emotional reaction as Norman did [10]. The second stage of the development is following with a design example to investigate female office worker satisfaction by using it.

The first phase of the questionnaire is divided into three parts, the first part of the basic information (age, education, marriage, income...). The second part of the survey of female office workers for the working pressure of the source of pressure on the workplace, emotional reaction (self-pressure work environment pressure ... and other items) and emotional response handling survey, the third part of female office workers for diastolic pressure demand (preference factors, functional requirements... and other projects .)

The second phase of diastolic pressure through a questionnaire for the appearance of the product design example, use the function, the overall feel, the three categories of satisfaction and massage surveys. On various topics in a very do not agree, do not agree, no opinion, agree, agree very much divided into five scales as Likert (Likert Scale). It is given in 1, 2, 3, 4, 5, as a follow-up assessment of satisfaction.

## 4 Implementation

Questionnaire of first stage is by sampling female office workers over the age of 18 have some spending power in convenience. Measuring a total of 39 qualified people,

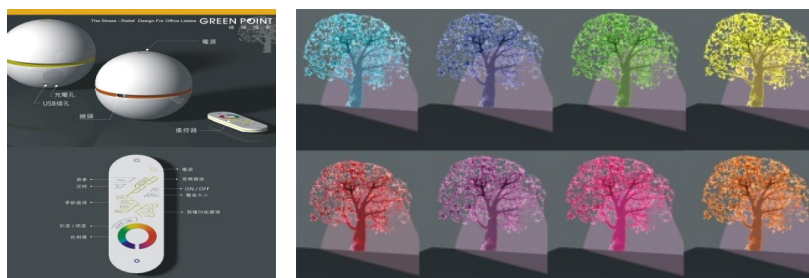
the age of the majority of 20-30 year old, 7 married women, unmarried 32, the data are collected. At the second stage questionnaire experiment applied into female office workers, a total of 54 samples which age most between 20-35 years old with 40 bachelor degree.

Observational survey results of the first stage, various factors cause pressure ranked in descending order are helpless accounted for 66.2% of 258 votes, restless 157 votes accounted for 40.3%, angry 147 votes accounted for 37.7%, depressed 146 votes 37.4%, manic-depressive 139 votes accounted for 35.6%, tense 118 votes accounted for 30.3%, panic 117 votes accounted for 30%, followed by 100 votes or less is sad 97 votes accounted for 24.9%, wronged 89 votes accounted for 22.8%, unfair 83 votes accounted for 21.3%,The other 81 votes, 20.8%, the emptiness 65 votes accounted for 16.7%, fear of 55 votes accounted for 14.1%, fear the 26 votes accounted for 6.7%. According to the survey results show that the society women in the workplace work generally faced with the pressure. Most people cannot get a good reaction. In long-term pressure on the mood, if she failed to obtain the vent window or massage healing will generate negative emotions cause psychological anxiety, mood swings, and physical in the health damage. This stage concludes the emotional reaction (helpless 66.2%, anxiety 40.3%) to further investigation.

In order to obtain the diverse demand factors, an open-ended questions collect female office workers' needs and expectations of the diastolic pressure. Collected data to compare and remove too similar meaning factors, 20 demand expectations are summarized.

Observed diastolic pressure product functions and expectations diastolic pressure has most of the similarities, such as transfer bad mood lovely shape, fun, sense of humor, people immediately vent help to carry natural ecosystems, aromatherapy calms mind as other commercially available stress relief products such as relaxation, help sleep, continuity, humane.

In next step a developed virtual plant designs (named Green Point) for female office worker satisfaction assessment are as Fig.1-4. It comes with 3 groups and 15 questions.



**Fig. 1.** Ball projectors (different colors match tree colors under)

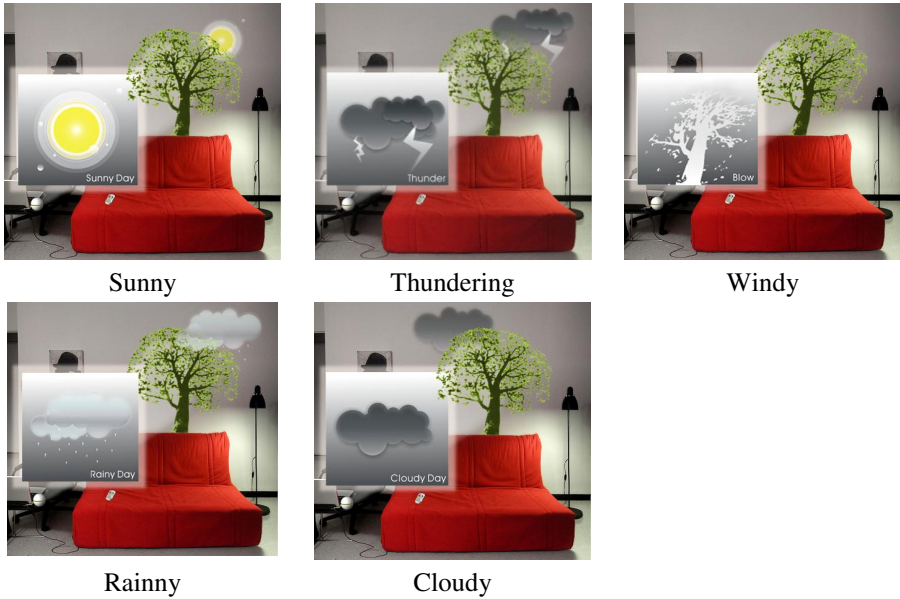
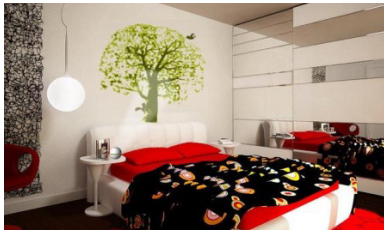


Fig. 2. Simulation of climate

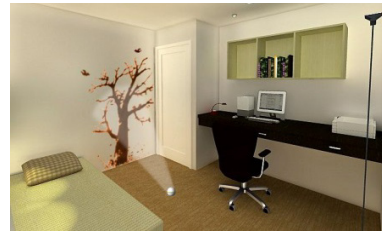


Fig. 3. Simulation of caring

The survey result is as Table 1. Try the practical design of the diastolic pressure, relax the body, mind and spirit, two kinds of healthy living concept as the planting class stress relief product design direction, combination of female office workers and the products they use on the diastolic pressure, the use of behavior, the use of needs of the design elements of the functional and situational settings presented. Through simulation, a questionnaire survey to understand the working women feeling on the diastolic pressure added.



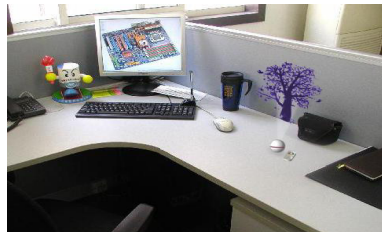
Top front of bed room



Beneath the working table



Living room corner



Office booth

Fig. 4. Simulation ambience

Table 1. Design satisfaction ratio

Question	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12	A13	A14	A15
Category	Overall appearance				Using function					Overall feeling					
Satisfaction	Fashion	Lovely	Vigor	Relieve	Humane	Technology	Continuity	Space	Relieve	Relax	Natural	Pleasure	Healthy	Creative	Relieve
Very satisfied	61%	52%	56%	65%	61%	56%	54%	65%	56%	54%	63%	59%	54%	63%	59%
Satisfied	31%	44%	35%	30%	28%	35%	35%	26%	33%	37%	30%	39%	39%	30%	39%
No opinion	6%	4%	9%	5%	11%	9%	11%	9%	11%	9%	7%	2%	7%	7%	2%
Not satisfied	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
High dissatisfied	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Busy working women can easily create a virtual planting to enjoy the sensual pleasure of the natural setting. To get rid of the high-rise buildings in the city and the cold cement, It is comfortable to create the overall space atmosphere by any projection of space and remote control. Planting interaction and situational select, season, weather, music, color etc., use function contains to select overall natural feel .It help the body and mind to relax. At the same time it enhances the sense of self-space, increase environmental decoration, and healing commodity special positioning. To summarize the concept of diastolic pressure, the body mind relaxation and healthy living are two directions fusion of any stress relief design. The interactive relationship from plants and natural context, the transfer of psychological comfort, create a whole space on scenarios to help the physical and psychological release of negative emotions are fun and can build confidence to avoid damage to the health threat to life in negative thoughts.

Different changes in the appropriate context to create a space environment more suited to their mood, enhance self-sense of space, so the atmosphere into which to relax the body, mind and spirit to meet the pressure relieve people more content.

Title of the evaluation to the appearance, use the function, overall satisfaction with the massage assessment experience three types of test items for a total of 15 questions, product appearance is part of the title, including the overall shape is a simple fashion, lovely, with vigor and sense of color matching, the overall appearance with relief pleasure of using 4 function topic contains humane sense of technology, continuity, and the space environment can change the application line the diastolic pressure unpleasant sensations of 5 questions, the overall feel part of the topics contain overall physical and mental relaxation, natural pleasant, healthy, creative, meet the diastolic pressure to help 6 questions.

Design sample assessment project satisfaction ratio as shown in Table 1, the observed design example the proportion of satisfaction found that The design paradigms Green Point planting situations diastolic pressure in the appearance of the shape up to 96% (satisfied or very satisfied) women office workers agree with the lovely feeling, diastolic pressure feeling 95%, 91% agree with the sense of science and technology in the use of functional part, with space applications, while 98% of the subjects agreed to achieve the pleasure of using the overall feel and comfortable pressure help. Evaluation of the above observations found that a majority of 93% of the subjects were given in the design example positive (satisfied to very satisfied), the proportion of 7%, and the evaluation of the negative (not satisfied to very dissatisfied) 0 %, the study based on literature survey results planting scenarios developed diastolic pressure product design examples can really help women office workers to relieve the pressure of self as well as the practical needs.

## 5 Conclusions and Recommendations

Following are the Conclusions and recommendations:

1. Female office workers under the long-term pressure with the emotions accumulated react mostly in helpless, restless status. Emotions did not get the vent window. Without compression capability, easily lead to negative emotions and mental health threat as Millenson found [11].
2. User needs and expectations are: relaxed, energetic, stylish, creative, space environment changes, natural ecological context and create a self-space stress-relief product.
3. Female office workers have a satisfactory evaluation of simple planting interactive features, the application of natural plant elements is very important for product development.
4. Virtual space environment variation opens a natural landscape window. For working women, not only help to transfer mood to relax, but also improve the atmosphere of tension space.
5. Female office workers prefer simple fashion, lovely sense of style, and natural-feeling creative feelings product. Natural elements, such as planting features can improve to attract women.

A lot of pressure on the formation not only in work, interpersonal relationships, affection relationships, family pressures, economic pressures as Rotter and Robbins mentioned have different types existed [12, 13]. Product demand is different for different sources of pressure on the follow-up study to explore the needs of different design strategies to meet consumer demand.

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