PERSONALITY
AND
ARCHITECTURAL PREFERENCES:
A SEARCH FOR PATTERNS

By
KRISTYN CLAYTON

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Chair

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PERSONALITY

AND

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ABSTRACT

by Kristyn Clayton, M.S.
Washington State University
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Chair: James Wise, Ph.D.

Is there a predictable link between types of individuals (defined by demographics), personality types and architectural elements such as floor plans, window arrangements or styles? If so, could this information form a prescriptive set of criteria beyond the normal design criteria (e.g., budget, proximity of schools, and geographic location) that could result in an evidence-based design palette for the architect to use to expedite the design process, instead of having to familiarize

themselves with the client through multiple personal interaction, thus making the residential design process more immediately focused on the individuals' deep-seated preferences and desires instead of the traditional focus on superficial needs and wants?

An online survey is used to assess personality type, demographic information, and preference for a variety of architectural elements to support assumptions found in the literature review that hint at a correlation between architectural preferences and the measure of a subject's degree of extroversion. However, when the data is analyzed based alone on the isolation of the introversion/extroversion trait, the results are inconclusive, in that the preferences did not deviate from a general preference trend for all respondents.

Other results that extend beyond the original introvert/extrovert analysis are as interesting and suggest preference patterns for one of four recognized temperament types (i.e., the Intuitive-Thinker or "NT" type of personality) as well as certain demographics such as age and gender. The "NT" types rated the selections much lower overall than any other temperament type for façade preference, and deviated from the general preference trends for all elements more than any other type. Interestingly, that temperament is characterized by noted experts on temperament types, David Keirsey and Marilyn Bates, as "compelled to rearrange their environment." They also suggest that "NT"s make good architects.

As for the age demographic, the trends shift noticeably with increasing age for all of the selected architectural elements. For example, the younger respondents prefer the Contemporary style façade, the oldest respondents prefer the Victorian style façade, while the middle aged respondents score both nearly equal.

With gender as the analysis filter, there is general agreement with the overall preferences of males and females, but the genders themselves disagree with each other across the range of element preferences.

The conclusion for this research might also be taken to imply that by further isolating the personality temperaments regardless of the degree of extroversion, and performing a more rigorous statistical search for measurable, mathematical patterns of preference with respect to temperament, the development of a new range of evidence-based architectural programming tools might become a realistic pursuit. This "tool" could tie all of the predetermined preferences based on the myriad of personal traits, and age and gender for that matter, together into a "custom-fitted" home, not just a custom-designed home. In other words, if the design product were a more reliable reflection of the client's "inner self," and could be achieved in a more time-efficient manner for the architect, then perhaps the consumer value of custom-designed homes would increase greatly.

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Dedication

This paper is dedicated to
Christopher Swaby, Esq. (and husband),
who has unselfishly supported me in
thought, word, and deed throughout this entire process.

CHAPTER ONE

INTRODUCTION

The Question(s)

    This thesis attempts to intertwine several concepts into one unified suggestion for the improvement of the custom residential architectural process. The concepts are: the architect as the definer of choice; personality as a predictor of preference; and the potential overlap of these two concepts to identify for the architect a way to more accurately define choices based on a client's unrevealed or unstated preferences, which in turn are based on personality traits. Below are several questions that need to be explored before we can make any conclusive attempt to mesh these concepts into a final suggestion.

Residential architectural programming is often a guessing game by the architect to match a number of client-centered bounding criteria (budget, size, location, etc.) with mutual acceptance of a variety of design elements in a relatively short period of time through intense, but brief, personal interaction. The techniques used by the architect are generally question and answer, and trial and error, using a series of sketches as the interface medium. This effort is costly to the client and can make the effort not worth the money or the time for most consumers. Wouldn't it be nice if there were a way for the architect to tap into the psyche of the client in a manner that would help expedite the process and perhaps produce a more satisfactory design for less money and in less time?

What defines architectural preferences? The first point to make is the distinction between choices and preferences. So many times, especially for the average consumer, choices depend not just on pure preference, but more specifically on the preferences of a spate of choices that are within the consumer's boundaries for budget, availability or some other constraint. Architectural choices for the custom-home client are presented to them by the hired architect, and are a product of the programming process, the sensibilities and often time limitations and/or preferences of the architect, and again the client constraints. So architectural preferences for the

client as determined by the architect evolve into a preference for one design over another.

Is this process truly reflective of what one would choose if given an infinite number of choices? If choosing were based on pure preference, then choice and preference would be equal, but most often they are not. Therefore, if choice and pure preference could somehow be closer to being the same process, then the consumer would have a greater satisfaction in their choices because they would be aligned with a deep sense of preference that is not tainted by outside constraints. How could this be accomplished by an architect in the short span of the custom home design process?

Preference in Architecture, Defining Choices and Personality

The architectural community has long posited a link between a client's subconscious self or innate personality, and their perceived spatial preferences,[1] but there is no large body of research nor conclusive evidence of such that is widely accepted and taken advantage of in the architectural community.[2] What does exist in large quantities is research attempting to quantify preferences mathematically so as to understand the 'prefence' concept more thoroughly. There is also prolific in today's

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[1]Cooper Marcus 1995

[2]Livingston 2005

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pop culture a myriad of applied research that links personality types to preferences for

a host of items including wardrobe colors, employment, significant others, and

various product sales to achieve greater client satisfaction.[3] The use of such linking

techniques appears to offer the consumer an added level of confidence that what they

are "choosing" will ultimately be more suited for them than those items chosen from a

sea of confusing and impersonal products. Could this marketing strategy be applied to

residential architecture practice to raise client satisfaction for the choices that the

architect determines are preferential?

If there is a link between personality and architectural preference, how would it

best be defined? The science of architecture in the words of Christopher Alexander,

noted scientist, architect and builder, is "an atrocious muddle intellectually."[4] Mr.

Alexander has spent a lifetime trying to bring architecture and science together in a

way that maximizes the potential of architecture to better the human condition. This

paper briefly discusses his theories on complexity and order and the subsequent

development of patterns as keys to understanding preference in architecture. Any

observable pattern for preference that relates to personality is what this research

hopes to uncover.

[3]Tieger 2001; www.e-harmony.com, Juergen 2004

[4]Alexander 2003

The idea of basing a design on a person's individual personality type is not a new one, but one that has largely gone unexplored via behavioral research. General personality assessment combined with marketing research has been performed extensively in areas of employment, job performance, team building, matchmaking and marital counseling. By asking the subject to take a personality test, then categorizing the subject's results into predefined categories, a fairly reliable predictor of behavior is produced that can predict certain behaviors to the subject. Corporations have used this assessment technique for years to establish whether or not a person is suitable for hiring into a particular firm or what individuals would comprise the best team for a particular project.[5] Pop culture has used this technique for a variety of internet dating services such as "Match.com" or "e-Harmony.com". One show on the MTV (Music Television) channel, *Roommates*, has early "twenty-somethings" enter the bedrooms of three potential dates to select the preferred date based on viewing the contents and conditions of that room.

Tapping into the subconscious or unconscious for marketing strategies is making great strides in the commercial world and has fostered limited applications in architecture such as the Zaltman Metaphor Elicitation Technique[6] (ZMET - named

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[5] Chambers & Manning 2000

[6] Szegedy-Maszak 2005

after a Harvard professor). In 2003, this 'mapping technique', i.e. linking the unconscious mind and its selection of guided images called "metaphors" to the architectural design process, was applied by an architectural firm, aptly named "fathom," to design a hospital wing that serves cancer patients and their families. This firm used a metaphor elicitation technique coined "deep design" to uncover unconscious desires; then, through a proprietary process, applied the results to the design of the facility. The result is a structure that supposedly reflects the deeper feelings and healing desires of its users, which include staff, patients and their families.

As the following literature review suggests, the techniques that link personality traits to architecture in general are not new, but have yet to be thoroughly examined in the context of specific architectural elements. If there existed a body of research that proved that there was a reliable link between the individual nature of consumers and their resulting preference for the details that compose a home, then the science and profession of architecture could be advanced to benefit the architect and the client equally. The focus of this paper then is to use a narrowly defined methodology to assess personality, note preferences for distinct personalities, then through graphical analysis observe any results that might suggest a link between the two with respect to residential architectural design elements.

CHAPTER TWO

LITERATURE REVIEW

This chapter contains a presentation of the most significant literature findings and their relevance to this research. It is necessary to demonstrate the relationship of several different aspects of this research, and also to discuss where future relationships based on this and similar research could develop.

The discussion topics below will hopefully lead the reader to a better understanding of the potential that this research has to offer. This chapter presents the literature review on these topics:

- the difference between choice and preference generally and with respect to architecture,

- the initial attempts to quantify architectural preference,

- the traditional architectural design process and determining
   preference,

- the existing research that links preference for architectural
   features to individual characteristics such as personality and
   demographic data, and

- current trends in architectural design to reach the client's deeper
   consciousness to assist in the design of architectural features.

These topics will define the research effort and direction embodied in this paper.

The Concept of Choice versus Preference

Behind the conceptual idea that this research, if taken to an exhaustive

conclusion, might one day suggest an architect's tool to improve satisfaction in the

custom design process is the need to understand the science of choice. The idea that

there is value in narrowing the choices of architectural details to a subset that is

predetermined by personality among other factors might prove more valuable is

supported by *The Paradox of Choice: Why More Is Less*,[7] by Barry Schwartz. the

subjective nature of the traditional residential architectural design effort is made even

less clear by the number of choices that exist today for consumers in all products as

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[7] Schwartz, 2005

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compared to days gone by. Mr. Schwartz describes an inverted U-curve of satisfaction which increases to a point as the number of choices increases, but yields to dissatisfaction beyond some point of maximum satisfaction as the number of choices continues to increase. In other words, there is a point of diminishing satisfaction for ever increasing choices. In the case of securing a home, choice is however bounded by social and economic limits imposed on the client and oftentimes choice has little to do with true preference. The number of choices is then smaller due to these outside bounding factors and may then keep the satisfaction curve limited to the low range, or rather, restrict the amount of satisfaction obtainable. Therefore, if the number of choices could be focused on ones that reflect the client's true preferences as necessarily bounded by the imposed limitations, then perhaps the amount of satisfaction could be heightened, even with limited choices, by offering choices that are inherently more satisfying. This distinction highlights one of the challenges in using residential architecture with respect to preferences in any research which is isolating preference from choice.

Initial Attempts to Quantify Architectural Preference

The oft cited management mantra, "If you can't measure it you, can't control it" is very applicable to this research and necessary for its methodology. In the 1930's

a mathematician named George D. Birkhoff decided that he would quantify the elements of aesthetics into a simple equation. He proposed that a measure of beauty or aesthetics, M, is expressed as the number of elements of order, O, i.e. its symmetries, balance and two dimensional coordinates, divided by the number of elements of complexity, C, for polygons this was defined as the number of indefinitely extended lines that contain all of its sides.[8] In other words, the 'order' is the geometrical relationships of identifiable segments of the object and 'complexity' is "the number of localities our sight will spontaneously rest on."[9]

$$M = O/C$$

Therefore, for a given order, as complexity increased, the measure of beauty would decrease. Conversely, for a given complexity, as the number of orders increased the measure of beauty M would increase. As it turns out, the most beautiful of polygons according to this formula is the square with a measure of M=1.5.[10] Birkhoff also applied his theory to objects of art and music varying the computational rules for complexity and order. Birkhoff was a pioneer in this type of research but he seemed to ignore any link between widely acknowledged beauty that can be described easily in general terms, such as a famous painting or a finely crafted vase, to individual

[8]Pham 2000

[9]Staudek 1999

[10] Scha, Bod 1993

preferences for a variety of beautiful objects as a function of the beholder's uniqueness, or the romantic nature of beauty. His theory has been instrumental in work on two dimensional visual interfaces in a wide variety of applications. It has not, however, gained much prominence in the world of three dimensional architecture. The formula might best be described as a complexity coefficient with respect to a measure of aesthetic order since it doesn't account for the actual experience of observation.

The monumental task of scientifically describing the seemingly subjective concept of beauty is still being pursued today. Complexity, on the other hand, has been explored to the point of a widely accepted conclusion, i.e. that it has a distinct influence on "beauty" or aesthetic quality. Research has shown that there are measurable preferences for architectural elements including high ceilings, lots of windows, shiny office buildings, and "popular" architectural styles, etc.[11] Other research also indicated that 'moderate complexity' in buildings is also a concept that appears to be preferred (as cited by Gifford and attributed to Joachim Wohlwill's research circa mid-1970s). In this instance moderate complexity is referring to the mid range of a collection of stimulus that contains a high number of the elements of order to a stimulus that contained a very low number of the elements of order and no

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[11] Gifford 2000

distinguishable patterns, or a high degree of chaos, where the stimulus varied from photographs of urban areas to music. There was noted some preferences for the high ranges and the low ranges observed, but the reasoning for those individuals' preferences was not defined. Gifford argued further that there is little predictability for a client's architectural preferences by architects. His analysis of response differences between architects and laypersons to a variety of modern office buildings demonstrated that the preferences of laypersons and architects may have only coincidently aligned, and that even more interestingly, the individual's criteria for establishing the responses (pleasure and arousal) was very different between the two groups. Gifford's research concluded that these differences can result in "severe mismatches" between laypersons and architects. The applicable conclusion for this research is that without specific tools to help the architect decipher the client's true preferences and what design elements might satisfy those preferences, a mismatch with a resulting unsatisfactory product, is likely and that a product that is extremely satisfactory to both the architect and the client is a probably a mere coincidence.

In attempting to understand the concept of preference, a wide variety of factors should be considered overall. Since understanding preference is not the focus of this paper, and certainly beyond the capability of its author, however, there needs to be some simple measure of preference that will help to anchor and/or describe the

results. As discussed previously, one basis for measuring preference is complexity as passionately discussed by Christopher Alexander in his paper, *New Concepts In Complexity Theory: Arising From Studies the Field of Architecture*[12] and supported by others as discussed in this literature review. To study the science in architecture, and then to learn to apply it is the impetus behind much of Mr. Alexander's research and he has spent a lifetime attempting to quantify and optimize the process of design. If his theories are to be believed, then there is value in understanding and measuring the complexity in architecture. This is an important addition to the previously cited studies that point to complexity as a measure and predictor of preference. However, unlike the sciences of biology or chemistry where complexity is discovered through studies of nature, humans create the complexity in architecture with requires new insights in defining it. That is why he posits that architecture can offer the traditional sciences a broader understanding of complexity.[13] He discusses that there needs to be a "shared notion of quality" which is what the architecture of ideal should be, not simply striving for the singular notion of beauty or aesthetic measure, and that the "quality" is a precise combination of beauty, complexity and order that cannot possibly negate the feelings of the observer.

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[12] Alexander, 2003

[13] Alexander 2003

Furthermore, the "quality" of the larger design is not a stand alone concept

based on a subjective aesthetic judgment, but the intricately woven development of

the subsets as they relate to one another and compliment on another, what he terms

relative coherence. Alexander thus uses the concept of order in a unique way, where

the nature of order is not simply the number of elements of a geomtric shape, but is

the "relative coherence" of subsets of parts of a larger design entity. These subsets

must have their own "quality" which interacts with, is derived from and relies on

other subsets of measurable quality to produce the larger design object.   And all of

this is still not completely defined without considering the observer's own wholeness,

where wholeness is a self-measure of the personal subjectivity of the observer.

Alexander states:

"It appears then, that after centuries, there may exist a reliable and profound
empirical method for reaching shared judgments about the degree of value [quality]
inherent in a complex system....there are powerful reasons for thinking that the value
which inheres in wholeness reflects on physical reality." [14]

Since complexity is so often encountered in this literature review as a measure

of preference, then perhaps complexity can be used to describe the different survey

elements in this research in a meaningful way and also to establish a good range of

samples for selection. Thus, this research will use simple measures of complexity to

[14] Alexander 2003

describe architectural elements in order to hopefully frame the results with previous

research on complexity and preferences in architecture.

The book, *Decoding Homes and Houses*, by Julienne Hanson, uses a

spatial analysis technique to quantify the floor plans of architects' homes in London,

England and then draws a conclusion about the results as it relates to the occupant's

satisfaction. Spatial syntax is a mathematical model, using graph theory, applied to

measuring adjacency and relative interaction of distinct spaces to each other. Hanson

posited that the spatial syntax of architects' own homes reveals interesting differences

and similarities. The results suggested that while the architects' homes were very

different in style from each other, they all shared a similarity in the level of spatial

complexity of the floor plans as measured by a convex space analysis technique. This

suggests that satisfaction for the educated architectural professional in home designs

has much more to do with spatial complexity than with style. If the same can be said

for laypersons, then complexity becomes an extremely important measure for

satisfaction and potentially for predicting satisfaction.

Further studies on preference in architecture show that complexity of surfaces

of buildings is a strong predictor for preference.[15] In the summary of a paper by

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[15] Stamps 1999

Arthur Stamps, entitled *Physical Determinants of Preferences for Residential Façades*, he states:

> "Traditional design discourse uses vague notions. The vagueness can be greatly reduced by confining one's descriptions of physical design features to materials and spatial relationships....[and].....the most important factor for visual [façade] preference turned out to be the surface complexity."

His research was itself mathematically and statistically rigorous and relies on some of the same concepts cited in this paper and many others on aesthetics and preferences in architecture. By developing a series of simple, but increasingly complex figures, and gauging responses to these figures over many months with many different subjects, this research developed equations of predictability relating to measured complexities of graphically simple façades designs. All of this effort supports the assumptions in tis research that complexity is a viable measuring tool for assessing different architectural elements, especially façades, and that preferences are predictable relating to different degrees of complexity. The extension of this research to the focus of this paper would then be to match varying complexities to varying personality types.

Various other literature which won't be cited herein concerning aesthetic or environmental preferences seemed to be focused on the social aspect of housing such as trees, neighborhood characteristics or closeness to shopping and not having to do

with any specific architectural elements. This is especially true with respect to preferences in elder adults. Designers may assume that older persons prefer single story, low maintenance yards, etc., that may reflect the older client's needs and desires when health becomes the focus. But there was little research on the older person's preference for aesthetics. With the baby-boomers comprising an increasing percentage of the aging consumer populace, it might be noteworthy to isolate further research on this group of people and their preferences for residential architectural elements. Related research is discussed in the next section on personality and associated links to general preferences.

Therefore, the literature review on this subject revealed that preference for architectural elements or concepts, while not easily quantified, can be linked to complexity, which is measurable by mathematic principles. The existing research proves that complexity can thus be used to predict preference. This paper uses complexity theory to describe the elements chosen for the selection process.

The Architectural Process with Respect to Preferences

What is it about personality typology that could possibly be used as a tool to aid the architect in the design process? In his book, *Architecture and the Human Dimension*, Peter Smith discusses the link between the tolerance for "novelty and

surprise" to preferences in architectural elements. He suggests, for instance, that

introverts, or persons that show the personality trait of introversion, are proven to

have a lowered tolerance for arousal and therefore would prefer designs that are less

complex. Conversely, extroverts are more prone to under-stimulation and need a

constant diet of stronger stimuli to maintain interest in an object. While this statement

makes a good case for a theoretical link, and has strong opinion statements to support

the supposed link in other research, there were no studies cited that had any statistics

or empirical research to prove the theory. Can this research and the his concept of

"stimuli" be translated to complexity? If so, then this is a suggestion that more

mathematically complex designs would appeal to more extroverted persons. Mr.

Smith does discuss a few concepts that were important in defining this research.

Smith refered to a "Wundt Curve"[16] that graphically describes the relationship

between complexity and the amount of pleasure a subject will have for a given

design. Refer to

 Figure 2.1.

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[16] Smith, 1979

Figure 2.1 The Wundt Curve
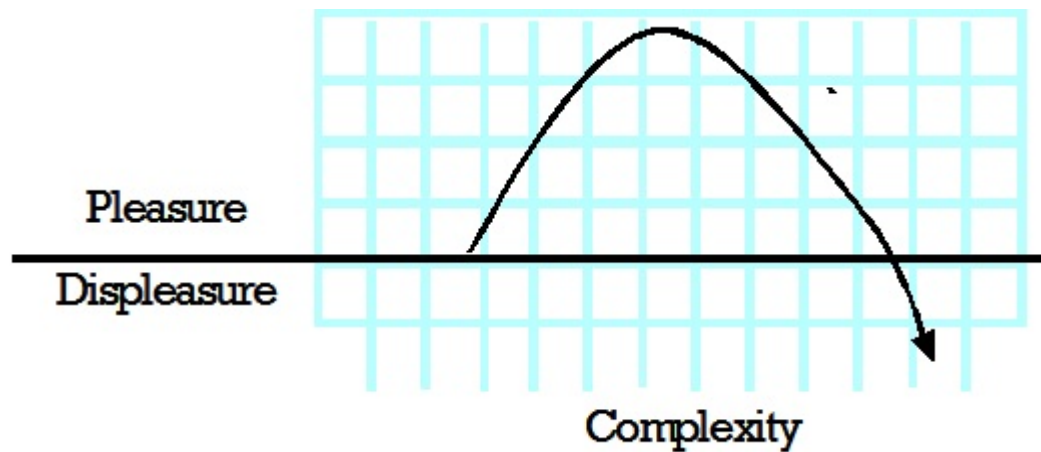
Simply explained, there is a peak of pleasure for a design that is somewhat

complex in nature, but rapidly increasing displeasure with an increasingly complex

design. Mr. Smith further states that there is no measure of the "keeping up with the

Jones'" factor that may affect all architectural preference and the resulting choices

which has already been noted to be a challenge in this research. Finally, he eloquently

proffers that:

> "....architecture can glimpse....that promised land where
> reason and dreams synthesize into ultimate truth."

The "how" of that synthesis is what this research is attempting to address. It is also

notable that the relationship of preference and complexity here is non-linear as

mentioned earlier. This could be another reason why preference, or beauty as seen

with the eye of the beholder, is elusive and has not been thoroughly understood.

In the case of this research, the architectural process is defined as the interaction between client and architect to produce a mutually satisfactory residential design. It is necessary to understand how preference factors into this process and what the state-of-the-art practices encompass. Traditionally, the architect uses experience, intuition, and observation to assess the preferences of the client during a sometimes lengthy (six months to a year on average) interview process. The process has very little to do with scientifically assessing the true nature of the individual client in order to gain a better understanding of what architectural elements might provide the most satisfaction. It is a subjective guessing game with no guarantee that a high degree of satisfaction will be achieved once the paper is turned into the physical form. The literature review supported this statement: while there were numerous casual mentions of the supposed connection between spatial design and individual personality, there doesn't appear to be a significant evidence-based body of research to support this hunch. This notion is also being discussed in the industry as recently as 2005 by Larry Leis, FAIA, 2005 Chancellor of the College of Fellows, American Institute of Architects, who in an article titled, "Research to Provide Proof for Evidence-Based Design," states:[17]

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[17] Livingston 2005

> "As architects, we know intuitively how design functions
> in creating a healing environment, but we don't have the
> research to back it up."

A follow-up quote by John Eberhard, Academy of Neuroscience Founding President,

suggests the need for architecture to[18]:

> "Go beyond intuition."

Mr. Leis also states that such research in architectural design[19]:

> "...will place a higher value on the architect's services because
> architects will have the evidence-based research tools to make
> design decisions,"

and design decisions that realize the full import of a client's economic, social, and

personal wants and needs. The awareness by the architectural community that

traditional design methods could use improvement is at the forefront; the

methodology is as yet undefined. This provides more impetus for this research; that

with a higher value for the architect's services, the more the service will be

considered necessary, and therefore sought after. Could it be that the secret to a

higher demand for architectural services lies in discovering the method of achieving

greater personal satisfaction in the final product as a result of the design effort. One

might think so.

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[18]Livingston 2005

[19]Ibid.

The inadequacy of the traditional design effort is brought out in the book, How Buildings Learn: What Happens After They're Built.[20] Stewart Brand uses a provocative quote to describe the essence of his book,

"All buildings are predictions. All predictions are wrong."

Mr. Brand's discussion of Strategic Planning instead of "Immediate Desire" programming supports why this research could be very important in the improvement of the architectural design process. The suggestion here is that "immediate desire" programming is superficial in nature, based on vacillating factors and will always result in dissatisfied clients. Stronger predictability and satisfaction can be had by using programming techniques that are focused at isolated aspects of the client's needs that includes deep personal needs as well as economic and social desires, that will result in greater satisfaction over longer periods of time; needs that are specific to the individual and not passing social fancy. He suggests that a building isn't really finished being designed until the inhabitant's occupy it and make it their own. If only there were some way to be able to predict this "completion" during the design phase by assessing the client's true needs and then designing to specifically fulfill them. In other words, if the design effort was considered more likely to render a house that is satisfying on a much deeper level than it currently does, then perhaps it could

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[20] Stewart 1994

establish more of a need for the architect's services. Consumers might then choose to use an architect to decode their true preferences into a home design because the result would produce an overwhelmingly greater satisfaction.

Personality and Its Link to General Preferences

Given the above discussion, the focus of this research then becomes finding an as yet undefined link between various assessments of a specific personality profile and the architectural feature preferences of that same profile during the design effort to capture a greater level of satisfaction. Personality was chosen because it has gained an amount of scientific recognition as a means to describe or predict behavior based on the variations of certain categories of personality and an arguably equal amount of popular acceptance that the predictive capability of personality assessment increases satisfaction. This section will briefly discuss the term "personality" and present the appropriate supporting literature that correlates various aspects of "personality" to general and architectural preferences. It is therefore hoped that the same correlation can then be quantified and verified for preference predictions in architecture as determined by a personality assessment.

To adequately address the term "personality", it is necessary to discuss how this research considers personality and what aspect of personality might render

reliable preference predictions. In the book "Please Understand Me" the authors very briefly present the history of the science of psychology. In their description, the science of personality is a compilation of the many different ways to try to model the 'why's' in order to predict the 'how's' of a person's or group of persons' behavior. These descriptions have varied over hundreds of years, but show a cyclic pattern surrounding the idea of temperament.[21] A person's temperament is the set of actions and reactions that identify their behavior. Modern use of the concept is derived from an ancient behavioral theory of Hippocrates. Keirsey and Bates' text rework the four temperaments of Hippocrates into a modern framework. The attention on temperament was reborn when the mother daughter team of Katheryn Briggs and Isabel Myers created a test based on Carl Jung's personality theories. This test became widely used as a categorization tool for separating people into sixteen categories that are derived from the combinations of four bipolar traits ($4^2 = 16$). The sixteen Myers-Briggs personality categories fall nicely into the four temperament categories as originally proposed twenty-five centuries ago by Hippocrates, used by the notable psychologist Carl Jung in developing current personality theories, and as restated by Keirsey-Bates. The distinction between the sixteen Myers-Briggs categories and the four temperament categories, besides the obvious numerical one,

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[21] Keirsey Bates, 1984

lies in their intended use. According to the Keirsey-Bates text, the sixteen categories are useful in providing a detailed description or portrait of an individual, while the four temperament categories are useful in predicting the behavior of a group of similar individuals. The authors suggest that using the sixteen categories to predict behavior can be cumbersome, and not necessary since it is the fundamental temperaments that supposedly predict what a person will do most of the time[22]. It is interesting to note here that the categorization into temperaments is not based on the Introvert/Extrovert trait, i.e. the tendency of an individual to seek solace or other people as sources of energy respectively, but on a combination of three other specific bipolar traits.[23]

The Big Five Personality Factors, by Boele De Raad, was convincing in the theory that it might be more telling, and, consequently, more useful to isolate the "factors" or traits of introversion and extroversion for establishing a connection between personality and architectural preferences[24]. Mr. De Raad states that extroversion is a predictor in other forms of research pertaining to such areas as the number of extroverts in leadership positions, the predominance of extroverts in certain occupations, the increase in job offers for extroverts compared to introverts,

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[22] Keirsey-Bates, 1984

[23] Keirsey-Bates, 1984

[24] De Raad, 2000

and the predictability of personality disorders with respect to the introvert/extrovert

trait. Therefore, any attempt to establish a link between the preference of a certain

group of like personality traits should be analyzed with respect to all sixteen

categories then again with respect to the temperaments as discussed previously and

finally with respect to the separate Introvert/Extrovert trait in order to completely

cover all potential personality categories available with a single test.

Other "preference prediction" research focused not directly on personality, but

on the factual composition or demographic data of a person. As an example, gender-

based preferences have been explored fairly thoroughly with respect to residential

choices, but with more of an emphasis on preferences for the bigger environmental

picture instead of the smaller scale of the house's detail. These studies are a subset of

the concept of personal construct theory. In the study, "Personal Construct Theory

and Residential Choice" by Valerie Preston and S. Martin Taylor[25] the authors

explore the demographics of age and gender with respect to residential choice (in this

research it was choice as the selections were already made). The results show strong

correlations for social preferences such as proximity of services nearby and whether

the house was single family or not with respect to age and gender. It did clearly

establish a link between family life-cycle and choices. One missing aspect that was

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[25]Preston & Taylor 1981

noted within the study was the identification of attributes for older women which the authors concluded potentially limited the study. This study focused on choices versus preference, but did mix the two in a way that could have been more meaningful to this effort if that distinction had been brought out.

Broad topic research efforts that produced reliable correlations between other physical aspects of a person and aesthetics are discussed in an article entitled, "In the Brain of the Beholder".[26] This article cites several research efforts that established links between aesthetic preferences and their right and left hemisphere abilities, handedness, and gender. This research can be seen as using a mix of the "factual" physical make-up of a person and their inner, more mysterious aspects. In the conclusion of this research, spatial orientation preference in paintings was correlated to whether a person is left handed or right handed. The capability of a person for higher right brain function was directly related to their preference for abstract art; higher functioning left brain respondents preferred more realistic artwork. Several studies cited in this article appear to suggest that women posses a more subtle aesthetic preference that is largely determined to be "less predictable". This could be linked, the research posits, to the left brain/right brain differences in the genders.

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[26]Strachan 2000

Thus this research delved into not only the superficial and factual elements of a

person's make up such as age, gender, family status, etc., but also probed deeper into

the person's inner being with the exploration of the right/left brain capabilities to

establish preferences for aesthetics in art. This research does establish support for

considering the inner design of a person with the design of an aesthetic object to

maximize satisfaction and for furthering the research of defining the link.

Current Trends in Design Linking Personality and Architecture

The conceptual idea of a correlation between architectural preferences and

personality is by no means a recent one. There are countless references in many of the

texts reviewed that quite clearly assume or suggest links, but never factually establish

any with data or research. "A Room with A Cue: Personality Judgments Based on

Offices and Bedrooms," a Journal of Personality and Social Psychology paper by

Gosling, et al.[27], tackled establishing a statistical link between personality and the

observation of the state of a room. A survey was conducted that observed offices and

bedrooms and then surveyed the occupants for personality traits in order to establish a

connection. The offices and bedrooms that were used were nearly architecturally

identical and, as such, the research was more concerned with individual interior

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[27] Gosling 2002

"design" and conditions than professional architectural design. The results showed that there was a predictable link between the conditions of the spaces, e.g., messy vs. neat, and the personality traits of their occupants, e.g. extroversion, agreeableness, conscientiousness, emotional stability, and openness to experience. While this is not a clear tie to the research effort of this paper, it does establish an interesting and consistent relationship between the characteristics of space and certain personality traits. These traits were the same as discussed in the book, "The Big Five Personality Factors" previously cited and can be obtained via a survey and/or via close personal observation.

One text that eloquently addressed the origins of intertwining personality, neuro-psychology, feelings and architecture is "House as Mirror of Self" by Clare Cooper Marcus.[28] This book promotes exercises that will help the reader to identify their feelings about "house" that may be repressed or unconscious. Ms. Marcus also presents her views and others on the "conflicting spatial desires of couples" and how they think quite differently about the place called home. Also discussed throughout her book is Carl Jung and the origins of his work on archetypes and the subconscious which actually were originally based on a dream of his about a house. The term 'archetypes' here refers to the personality categories that are discussed earlier in this

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[28] Cooper Marcus 1995

chapter and called temperaments. Jung's "house dream" is often referenced in several texts cited in this paper. His description of the house is a metaphor on the levels of consciousness starting with the basement or deep subconscious and building up to complete consciousness. Ms. Marcus' most notable discussions on the development of "house" by Carl Jung and others she personally knows reveals that when one is allowed to change the environment one lives in, it will reflect the state of the psyche of the occupant. She presents many examples of this, but also states that for most of us, we must adapt to the environment because the option of shaping and changing our environs when it suits us is not practical. Her work in establishing the link between the deeper consciousness and the design of the house is paramount to this research, although offers little in the way of empirical evidence. Interestingly, Ms. Marcus also suggests the introvert/extrovert trait as a predictor for preference and includes a sketch that has the extrovert's house as a stretched tarp-like abode tied to the earth at four corners versus the introvert's house as essentially a fortress with few openings behind an impenetrable wall. This is further support to analyze the data in this research using several different personality trait combinations. Her conclusions might also be extrapolated to posit that being able to match a person's psyche prior to buying or designing a home would result in a better "mirror of self" and hopefully a deeper, truer satisfaction.

One of the most striking examples in support of the idea of shaping ones environment to reflect the psyche can be found in the Winchester house in San Jose, CA. Mrs. Winchester, wife of the inventor of the Winchester rifle, slowly lost her grip on reality and sank deeper into a state of fear and paranoia. As she did so, she had carpenters build areas of her house to funnel the spirits away resulting in doors that lead to brick walls, doors that open out into the air, and stairways that are only one inch on the rise. A tour of the house is an amazing revelation of her efforts to escape the demons that haunted her by having carpenters on site around the clock for years, in an effort to deceive the spirits. It is worth a tour for anyone who is curious to see a fascinating example of how the house can be a frightening mirror of the self.

 For a less psychotic example, there are several examples in Thomas Jefferson's Monticello that reflect his inner self and his focused interests. Many of the rooms in that historic mansion are not square - in fact, he considered square corners a waste of space. His desire to use time and space as conservatively as possible is reflected in the design details throughout the house such as beds in alcoves to maximize floor space with closets above. The dining room has a built-in dumbwaiter that he imported from France that brings wine up from the cellar and rolling dumbwaiters to reduce the need for servants interrupting the dining experience. The windows in the dining room also serves as doors to the adjacent tea room to enlarge the room when necessary. The

same windows open up around the house to bring the outdoors indoors since outdoor living spaces were very important to Mr. Jefferson. These are all design features that reflect a strong, healthy personality that sought to maximize space in a relatively small mansion- features that are sadly scarce in most popular home designs, except those owned by creative and energetic craftspeople. While these are two very different examples of the house as a mirror of very different selves, they both demonstrate that if given the chance, the home owner can incorporate their own personality into their homes' design features.

Along the same lines of developing the environment based on a knowledge of oneself is the design technique of Vishu Magee as detailed in his text "Archetype Design".[29] Mr. Magee uses and encourages in his clients various meditation techniques to discover design details that relate to a wide range of informally defined archetypes from nature and astrology to Jung's personality archetypes. Although there doesn't appear to be a direct, prescriptive link between specific details and elements of nature or personality in his work, he is quite convinced that the design of a house can be a healing force for the wounded spirits of all humans. By transforming dreams into design details, he claims to link the subconscious needs and desires to creative elements of residential design that will ultimately satisfy the occupant's soul.

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[29] Magee 1999

In support of this research he states, "...while attempts have been made to correlate creativity with personality, motivation or childhood experiences, the creative process remains an elusive quarry." He offers an explanation that such research that would link creativity with personality is hampered by "our cultural preoccupation with success and achievement." Certainly this presents a challenge to any research that deals with assessing such a social icon as "house".

Literature Review Conclusions

In conclusion, the literature review proved extremely valuable in formulating the methodology for this research by highlighting several important and moderately developed theories:

1. Choice and preference are two entirely different concepts. Many times the choice of a home is not what is preferred because of social and economic factors beyond our control. Preference is more of an indicator of what might truly satisfy us and as such is the better link to who we are on a deeper level and ultimately to a deeper satisfaction.

2. Personality type has been linked to general preferences for other items since the advent of the Myers-Briggs tests and is a very popular concept with consumers. The popular acceptance that important choices can be aided by an

assessment technique based on contrived categories of the psyche provides an added assurance that a choice will be satisfactory.

3.   The four temperament categories and the sixteen Myers-Briggs personality categories are related, but are used in different ways. Introversion/Extroversion may be a very reliable predictor for architectural preferences as suspected by psychologists and architects alike. All three will be used to separate and analyze the data in this research.

4.   Establishing predictability in research relies on a careful development of the criteria involved. Other research has shown that complexity is a useful and proven method to frame the choices of architectural elements and to perhaps understand the results.   Preference in architectural elements seems to rely on a measure of complexity as well as many other factors about the person's demographic identity.

5.   The science of architecture has not adequately quantified the process of designing as of yet in order to control and/or improve it. The whole process is still undefinable as an exact science and is tangled perhaps inextricably in social and subconscious webs.

6.   Linking personality characteristics, categories, traits, temperaments, etc. to

architecture could produce a higher degree of satisfaction but is not based on

any evidence to date.

Therefore, the intent of this research will be to discover patterns of preference

based on popular personality categories that could potentially be used in a

prescriptive manner to assist in the "elusive" nature of the design process. If such

patterns exist, and are consistent and understandable, then it may be possible to give

the science of architecture the boost it needs to quantify, measure and improve its

process thereby increasing the value to consumers. Given that the experts all agree

that there must be a link, just as yet not clearly defined, the challenge will be to find

the key that unlocks this universally acknowledged theory and brings it into the light

of rigorous research.

CHAPTER THREE

METHODOLOGY

Survey Details

A web-based survey technique was used to assess preferences for architectural

elements, to gather demographic information and also to assess personality profiles.

This method revealed a wealth of data, a fraction of which is being analyzed in this

paper. Specific elements of the survey are discussed below for clarity and

understanding of the method. A copy of the survey can be found for reference in

Appendix A.

In deciding how to approach the data gathering for a reliable survey, it is necessary to

think about two entirely different aspects related to this effort. The first consideration

revolves around creating a survey that was user-friendly enough that it doesn't bias

the respondents negatively by its nature. The second consideration has to do with the

relatively new technique of online surveying.

Great time and effort was spent in creating and debugging this survey so that it would be responded to and subsequently passed on. Making the survey user-friendly given all of its components (a personality test, demographic questions, and eighteen selections) is extremely important and requires some shortcuts. The personality test selected for use is what personality researchers term a "short instrument". Literature on the subject of using shortened versions of oftentimes lengthy personality tests was itself a short subject. Professor Samuel Gosling of the University of Texas provided some consulting on this aspect through a casual conversation and also through his research. He covers the topic of "short instruments" in his paper, A Very Brief Measure of the Big-Five Personality Domains.[30] In the first paper mentioned immediately above, Professor Gosling presents the pros and cons of using shortened versions of personality tests and tests the accuracy of several shortened versions of a larger test for assessing the "big five" personality traits used by clinical psychologists. The conclusion is that the short instruments reached "adequate levels" of test and retest reliability, but should not be used when situations require a thorough knowledge of an individual's personality traits nor where personality is the primary topic of interest. This is applicable to the focus of this paper.

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[30] Gosling, et.al. 2003

Other research helpful in guiding the process for creating a user-friendly

survey comes from a Washington State University professor in the paper Principles

For Constructing Web Surveys.[31] This work was cited extensively in any text that was

consulted on web-based surveying. Professor Dillman's paper suggests using eleven

principles for designing web-based questionnaires. Each of these principles was

considered when creating the survey. Of primary interest for this effort were the

following principles:

> "*Principle 1.* Introducing the web questionnaire with a
> welcome screen that is motivational, emphasizes the ease
> of responding, and instructs respondents on the action
> needed for proceeding to the next page."
>
> "*Principle 3.* Present each question in a conventional
> format similar to that normally used on paper
> questionnaires."

In our case, the development of the design selections followed this principle as

much as possible. It was decided early on to present the selections in formats that

were expected by the respondents and not in formats that could be thought of as

unusual.

> "*Principle 11.* Be cautious about using question structures
> that have known measurement problems on paper

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[31] Dillman 1999

questionnaires; e.g. check-all-that apply and open-ended questions."

By and large, the principles are intended to ensure that the survey must not employ sophisticated web interface actions or expect that the user will search for the path forward through the survey.

The second consideration mentioned above was the reliability of web-based survey techniques. This field of research is changing rapidly, because the instrument of survey is rapidly changing. Skepticism abounds about the reliability of the internet as a tool for rigorous research. However, web-based surveying is, by all accounts, becoming widely used in social science and educational research all over the world. In fact, the literature that was discovered on this topic seemed to change greatly in nature from 1998 to 2004, solely due to the capabilities of the personal computer, the familiarity of the users with the internet, and the understanding of its limitations by research professionals. Several papers were instrumental in gaining clarity on the subject of web-based surveying and the subsequent short-comings of this effort. Two concerns for internet surveying were

1. The sampling bias; and
2. Response rates.

These were addressed by David Solomon in his paper, *Conducting Web-Based*

Surveys.[32] He suggests that there is a need for caution when using web-based surveys and discusses several different ways that they can best be used. Again, this paper is five years old, and as such, offers time-dependent information that has since become obsolete. The purpose of that paper was to offer software developed by the author.

Other more potentially and more objective research discussed the sampling bias and response rates as concerns, but as the internet, users, and personal computers have become more sophisticated, the remaining limitation seems to be the sampling bias. The sampling bias, or only getting respondents who are of a certain intelligence, socio-economic standing, age, etc., was a concern in all objective research that was reviewed.

In the paper, *Should We Trust Web-Based Studies?*[33] Professor Gosling and his colleagues compared large sampling data quality with published traditional samples. The research concludes that internet surveys do not suffer adversely from non-serious or repeat responders, are consistent with findings from traditional methods, and are relatively diverse with respect to demographics of traditional survey respondents. In this paper, six preconceptions are discussed and statistically analyzed. The one mixed finding from this research is that the samples are not entirely representative of the

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[32] Solomon 2001

[33] Gosling 2004

general population, but are actually more diverse than traditional sampling in many

domains such as gender. The bottom line of Gosling's research is that internet

methodology is here to stay and can successfully contribute to many areas of

psychology.

Administration of the Survey

The survey was administered online, in an anonymous fashion, and distributed

to a wide cross-section of potential respondents via a random email "contact

pyramid" fashion to individuals and also to related professional list-serves. The

author of the survey selected various parties from email contacts totaling nearly 40

people and sent them the survey link. The people who took the survey were asked to

send it on to their contacts via e-mail so as to create a pyramid of somewhat

anonymous respondents. Several of those contacted are design/build and/or

psychology professionals, who, in turn, sent the survey to their email contacts and

also to professional groups of which they are members. This effort solicits cognizant

respondents who have some knowledge of the design/build profession in order to run

some comparison of the resulting data in a more focused fashion, if desired. The

demographics data is an attempt to identify any respondents that might have a bias, to

understand the bias inherent in the survey, and to offer other criteria for analyzing the

data other than personality type. The distribution method is also an attempt to gain the

most respondents in the least amount of time. In less than one week's time, 442

persons had responded to the survey. The data was analyzed using this sampling

count.

Presentation of Survey

Jerry S. Wiggins' book, *Personality and Prediction,* helps establish the procedure for

using personality assessment for prediction and research and discusses the inaccuracy

of this approach.[34] He suggests the following steps to use in a methodology for

establishing prediction in research:

- perform a criterion analysis,
- select instruments (the architectural elements) that reflect the range of criterion chosen,
- develop a predictor test,
- ensure that it is a test for a combination of data,
- ensure that the data requested establishes a means for cross validation, and
- consideration for the application of the predictor test to gather data.

Each of these steps was used in developing this methodology. The basic criterion

used to select the architectural elements is the measure of complexity.

The survey had five basic segments:

1. a demographic questionnaire;

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[34] Wiggins, 1973

2.   an assessment of personality type using an abbreviated Myers-Briggs
      test;
3.   the assessment of preference for house types or façades;
4.   the assessment of preference for an interior elevation view of a window
      arrangement in a bedroom; and
5.   the assessment of preference for a floor plan involving two bedrooms
      and two bathrooms.

The architectural elements were presented in random order to remove any bias from the order of presentation. These segments are discussed several more times for explaining the data and the resulting conclusions.

Demographic Questions

A series of demographic questions were asked to help account for any bias that might exist in this survey. It will be important to validate the respondents' population criteria as compared to that of the general population. Also, there may be a preference with respect to the participant's age, gender, and education in general, that if known, can be reviewed and considered. In addition to a bias for a particular demographic, there may be research data that proves interesting for establishing patterns of preference. The demographic questions also included a verification question for the Introvert/Extrovert assessment by asking whether a respondent considered themselves shy or not.

Personality Assessment

An abbreviated questionnaire, or short instrument as discussed in the literature search, consisted of four bipolar questions, i.e. asking "are you this or that?", with each question having two comparative columns of descriptive behaviors. Standard personality tests such as the familiar Myers-Briggs test can contain up to 75 questions and was considered too lengthy for use in this format.

Architectural Element Selection and Presentation

There are several aspects of this part of the research to consider. First, what architectural elements should be used? Secondly, what media to use for the presentation of those elements. And lastly, how to objectively and quantitatively differentiate the elements one from another in order to explain a potential preference?

The architectural elements that were selected for this survey are façade styles, interior elevations, and floor plans. These are perhaps the most distinctly recognizable elements of a residential design, and the ones with which the consumer is most familiar. Each element was presented separately and asked the respondent the question, "How well do you like this [element]?". The respondents then selected on a

sliding scale from 1-5 the rating for that element. Each element is described below with respect to why it was selected and how they were presented.

The three architectural elements, house style via a façade, interior elevation, and partial floor plan, were presented with a variety of methods. The façade styles were scanned from internet pictures and their size was normalized to reduce any bias based on presentation. The interior elevations were created with Microsoft Power Point software. AutoCAD software was used to create the floor plans in a very non-stylized format. All selections were imported into Power Point for the final presentation on the website.

As was discussed previously, the surface complexity of the façades was the overall preference determining factor in the research by Stamps.[35] If that result can be generalized and applied to all of the visual elements of this research survey, then perhaps there is a verifiable, measurable and predictable preference based on a complexity value for not only general preferences that will be analyzed in this research, but also for various personality types. In other words, with a relative measure of complexity for not only the façades, but the other two architectural elements, we may be able to understand any preferences noted with links to

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[35] Stamps, 1999

previously performed research and then apply the same rationale to a correlation of the preferences to the various personality types.

Façade Styles

Façades were considered useful to assess the subjects' preference for exterior appearances or aesthetics. It is the only outwardly visible architectural element as compared to the inward selections of the other two design elements. Six very different styles of houses were selected from the immense array of samples available. Care was taken to select pictures that were recognizably distinct in style with a wide range of complexity, yet similar in presentation and format with relative sizes that could be reasonably assumed to be comparable. The six façade styles selected are:

F1. A-frame;
F2. Contemporary;
F3. Georgian;
F4. Southwest;
F5. Tudor; and
F6. Victorian.

The pictures of the selections can be seen in Appendix B. As discovered in the literature search, pure style, while being an important consideration in choice, does

not necessarily predict preference. It is the concept of complexity that appears to

determine a measurable and consistent preference for architectural aesthetics.

One other somewhat related study that dealt with house style preference and

cultural tastes, found that after an extensive process of selecting and narrowing down

42 house styles, 15 defining styles were finally chosen to base their study on.[36] The

researchers performed extensive tests with subjects, interviewed housing contractors,

and used students to weed out the original list in order to have a selection set that was

recognizable as a distinct style by respondents, popular with the current housing

industry, and available throughout the continental United States; similar criteria for

the list in this research. Their resulting list includes four of the same styles chosen for

this research, Georgian, Tudor, Queen Anne (similar to the Victorian), and

International (similar to the Contemporary). There was also a Spanish style house in

that study, which could be considered similar to the Southwest style in its uniqueness

and cultural destinction, and could be argued a recent predecessor for the currently

fashionable Southwest trend in the Western United States. The A-frame was not

among the houses from that study and is the only very different addition. The homes

in the Nasar study were all two story while the ones selected for this study were

varied. The results of this study were interesting in that all of the culturally different

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[36]Nasar 1998

groups preferred the "Post Modern" style of house with the International style

considered as the highest in status. A post modern style of house was specifically

excluded from this study as being too familiar of a choice and thus potentially a

runaway favorite, which would not reveal any reasonable explanation for preference.

Complexity as discussed above was considered an important criteria for the

selection of the elements in this research. The technique used in Stamps' work for

façades counted the number of roof lines, wall planes, windows, and doors. A simple

summation of those quantities reveals a relative "complexity factor."

Table 3.1 Façade Complexity Matrix

Façade Type	Roofs	Walls	Windows	Doors	Complexity
F1 A-Frame	1	1	8	1	11
F2Contemporary	4	6	7	1	18
F3 Georgian	2	1	10	1	14
F4 Southwest	0	6	7	1	14
F5 Tudor	3	3	2	1	9
F6 Victorian	6	6	8	1	20

Again, establishing these values may help us to make the distinction between a

general preference for more complex façades as has already been proven, and the

preferences exhibited by certain personality types. It may also be a way to describe any of the preferences that are observed.

Interior Elevations

The use of an interior elevation in a bedroom was chosen to, hopefully, be able to assess the preference for visual arrangement in a space that will illicit a strong, individual reaction. It was the intent of this portion of the research to use elements that clearly capture distinct differences in interior, architecturally controlled visual layouts. Simple Power Point graphics, based on a single rectangular unit of distance were used so as to remove any reaction to a particular style of bedroom design, window type, or drawing style. The windows are a repetitive design of a small square and a longer rectangle into varying sizes and symmetries. A small range of variations, (i.e. the use of only squares and rectangles, instead of square and arched, or circular, or hexagonal, etc.) was considered important to this selection criteria, for fear that varying the selections too much would confuse the results.

Establishing the complexity factor here as was done in the façade selections is again based on a simple mathematical concept. It is described as the box counting dimension method for elevations in the book *Fractal Geometry in Architecture and*

Design, by Carl Bovill,[37] however, it is not a complete fractal analysis. In short, a grid

or scale is imposed on an elevation and the number of boxes in the grid that contain

line segments of the actual graphic is counted. Varying the grid size, or number of

boxes, will vary the final box-count value; our effort needed a grid that would

produce the most amount of information and render a useful range of values. See the

example below in Figure 3.1, "Example of the Box Counting Technique."

A grid size of twenty-eight boxes per the wall area, as it was printed out on half

a sheet of paper in Power Point format, was used over the major plane of the interior

elevation, to analyze the different elevations. A twenty-eight box grid gave values

from six to eighteen as shown in Table 3.2, or threefold, which appeared to be a

decent range for comparison. Please refer to Appendix B for pictures of the all of the

walls and the imposed grids.

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[37] Bovill, 1996

Figure 3.1   Example of the Box Counting Technique
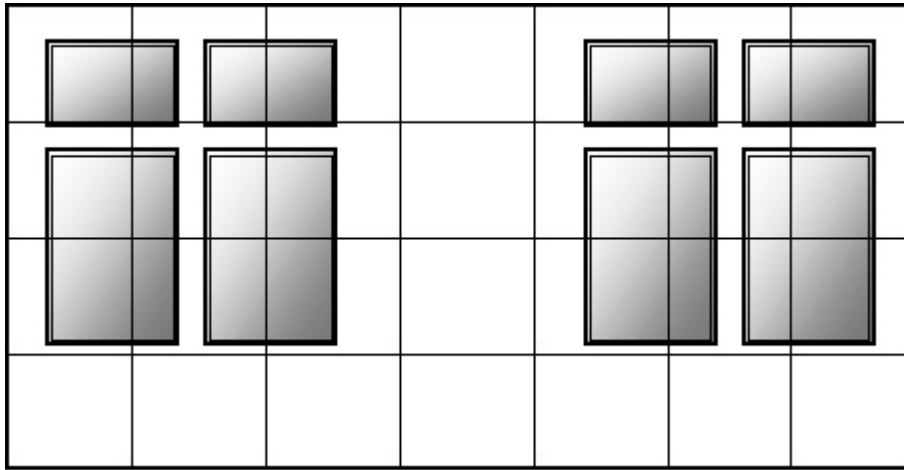
In the example of a twenty-eight size grid above, the number of boxes crossed by the lines of the window is equal to eighteen, the other ten are empty giving a complexity ranking of 18.

Table 3.2, "Interior Elevation Complexity," below, presents the values that were used to quantify the complexity of the selections. A good range of complexity values results.

Table 3.2.   Interior Elevation Complexity

Interior Elevation Number	Complexity (Number of Boxes)
I1	18
I2	10
I3	6
I4	13
I5	15
I6	9

Again, this may be used in an attempt to understand any noted preferences of the general averages of the survey respondents as compared to the survey results for various personality types and specific demographic subsets.

Floor Plans

Parts of actual floor plans are used to assess the preference for spatial layout without overwhelming the participant with too much information inherent in a complete floor plan. A simple technique to establish complexity of the partial floor plans was drawn from studies on spatial syntax. The spatial syntax analysis field is

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broad and far-reaching, but provides a wealth of information on analysis of architecture as noted in the literature review.

The concept of convex spaces in spatial syntax analysis to describe the layout was selected. So actually, the partial floor plans are arrangements of convex and non-convex spaces. Bedrooms were used for the same reason as discussed in the interior elevation section, in hopes that an intimate space arrangement would evoke a stronger reaction.

The differing partial floor plans were analyzed by how many convex spaces they contained. A convex space is defined as a bounded area, whether by walls or imaginary boundaries, that contains no acute angles within its borders.

Figure **3.2**   **A Graphical Description of Convex Spaces.**
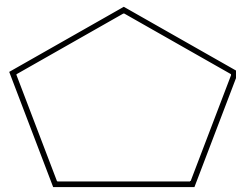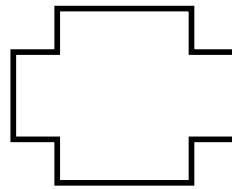
CONVEX   **NOT CONVEX**

The selected partial floor plans were similar in function and normalized for size and detail. Unrelated details were deleted so as not to take up the participants' time in understanding the plans. By choosing only a few equal-function spaces, i.e. a master

bedroom and master bathroom with a second bedroom and a bath, it is hoped that the

survey mitigated the confusion of trying to understand a whole house or too many

spaces at once. Please refer to Appendix B for the survey partial floor plans and their

counterpart convex space layouts.

The floor plans are lettered and the number of convex spaces contained in each

are presented below in Table 3.5. There isn't a wide range of values with the plan

complexity, however, that is in part due to the strict definition of the space criteria for

this element.

Table 3.3   Floor Plan Complexity

Plan	Convex Spaces
P1	12
P2	16
P3	19
P4	11
P5	16
P6	12

To summarize, the architectural element selection criteria and associated

simple analysis of their complexities were generated to explain a general respondent

preference by distinct personality types or demographic subsets. At the very least, the

preferences should validate existing research that has shown general preferences for architecture that has moderate complexity.

Data Gathering

A sampling of one hundred participants is considered to be statistically significant for personality type surveying, according to the research methodology presented by Wiggins and mentioned earlier in this chapter.[38] This opinion is based on the premise that the number of participants sought after needs to be enough to ensure that there is a strong showing in each of the personality traits. This is necessary because several of the personality types, at least for the Myers-Briggs categories, only comprise a small percentage of the population; e.g. the ISTJ personality type from the Myers-Briggs personality assessment method may only apply to 6% according to the Keirsey-Bates text.

Responses were tabulated using Microsoft Excel with multiple worksheets. Please refer to Appendix C for the general data worksheets. The data gathering was completely anonymous to the researcher, recorded using a numerical identification that related to the exact time that the respondent took the survey, and only tied to an identification of the respondent by the server. Decoding by the webmaster could be

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[38] Wiggins, 1973

used to identify the respondents' internet address, but that was only performed once and only at the request of a respondent to ensure that the data had been properly recorded. If respondents wanted the results of the survey, they recorded an email address. That list will be kept by the webmaster for the entire length of the research.

Analysis Techniques

An overall or general preference tendency based on an average of the respondents ratings will be calculated first and used as the base preference against which other subsets of personality and demographics are compared. A separate preference data set will be developed for each of the other personality defining measures from the demographic data and the personality test. A simple average of the total rating values for all respondents, or mean, was used to indicated the overall preference. The highest average values are referred to as the "most-liked (ML)" elements and the lowest average values are referred to as the "least-liked (LL)" elements. Since the design process is more about weeding out what clients don't like, the least-liked elements may prove to be as interesting of a predictor as the most-liked.

The personality test resulted in data that could be grouped into sixteen categories of personality known as the Myers-Briggs personality types, into the four

temperament types described by the Keirsey-Bates text, and also into the bipolar traits

of introversion or extroversion. The analysis of the preferences was performed

individually for the sixteen personality types, the four temperament types and the

bipolar traits of introversion/extroversion. A brief explanation of each of the

personality types and temperament types is presented below in Tables 3.6 and 3.7 to

help the reader understand certain abbreviations used throughout this paper and the

references in the results and conclusions.

Table 3.4   Myers-Briggs Personality Types[39]

Myers-Briggs Bipolar Traits	Abbreviations	Resulting Sixteen Personality Types			
Introvert-Extrovert	I/E	ISTJ	ISTP	ESTJ	ESTP
Sensing-Intuitive	S/N	INTP	INFP	ENTP	ENFP
Thinking-Feeling	T/F	INTJ	INFJ	ENTJ	ENFJ
Judging-Perceiving	J/P	ISFP	ISFJ	ESFP	ESFJ

The sixteen personality types are derived from all of the possible combinations

of the four bipolar traits. In short, it is considered that a persons character can be

described by the combination of these four bipolar traits into sixteen personality

types. The person then is either predominately introverted, shy, or anti-social (I) OR

extroverted, outgoing or sociable (E), AND usually behaves practically, sensibly,

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[39]   Keirsey & Bates, 1984

fact-based (S) OR intuitively, spontaneously, fantasy-based, (N) AND makes most

choices based on impersonal, logical thinking (T) OR "personal feelings" and

emotions (F) AND normally reacts decisively, with a sense of closure or clear

purpose (J) OR more often remains undecided, flexible, unsure until forced into a

decision (P). [40] Everybody in reality is varying degrees of the four bipolar traits, not

simply one or the other. These degrees can also change over the person's life time.

Table 3.5   Keirsey-Bates (K-B) Temperaments[41]

Temperament	Corresponding Bipolar Traits from Myers-Briggs Theory		Descriptions
SP "Dionysian" (38% of population)	Sensing	Perceiving	**Impulsive; creative; exciting; hungers for action; important to be seen as a "free spirit;" lives in the immediate moment; colorful**
SJ "Epimethean" (38% of population)	Sensing	Judging	**Cares for others; tradition is important; conservation is motivating, defined by belonging; very responsible and often over-committed**

[40] Ibid.

[41]   Keirsey & Bates, 1984

NT "Promethean" (12% of population)	Intuitive	Thinking	Important to understand the power over nature; must be competent; defined by "shoulds;" seemingly arrogant and individualistic; very self-critical; likes rearranging their environment
NF "Apollonian" (12% of population)	Intuitive	Feeling	"Extraordinary" individuals; unique; driven by self-actualization; little interest in commercial ventures; can be an intellectual butterfly going from idea to idea; centered on people

So it can therefore be seen that the Keirsey-Bates temperaments are based on a recombination of three of the bipolar traits as defined by the Myers-Briggs theory, excluding the Introversion/Extroversion traits. As stated before, the temperament of an individual is considered more useful according to the Keirsey-Bates theory in describing how a person behaves as opposed to the sixteen Myers-Briggs personality types which reportedly merely describes the differing characters of individuals.

CHAPTER FOUR

ANALYSIS RESULTS

Data Verification

Survey verification is important, especially for the abbreviated Myers-Briggs

testing format. Generally, the abbreviated Myers-Briggs survey used in this research

resulted in respondent percentage values that were fairly close as compared to the

percentage values obtained from the standard, longer test.[42] The smaller the

percentage was, the more deviation there was from the standard test percentages listed

in the Keirsey-Bates text. Table 4.1 shows the percentage comparisons for both the

Myers-Briggs personality types and the Keirsey-Bates temperament types. It was the

intent of using the abbreviated test to reduce frustration in taking the survey.

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[42] Keirsey-Bates 1984

Table 4.1   Myers-Briggs and Keirsey-Bates Respondent Percentages

Myers-Briggs Type	Percentage of Survey Respondents	Percentage of General Population[43]	Keirsey-Bates Temperament Type	Percentage of Survey Respondents	Percentage of General Population[19]
ESTP	4	13	SP	22	38
ISTP	6	7			
ESFP	6	13			
ISFP	6	5			
ESFJ	6	13	SJ	48	38
ISFJ	14	16			
ESTJ	11	13			
ISTJ	17	6			
ENTJ	2	5	NT	10	12
INTJ	2	1			
ENTP	3	5			
INTP	3	1			
ENFJ	4	5	NF	20	12
INFJ	4	1			
ENFP	7	5			
INFP	5	1			

The webmaster verified that each response considered was a unique sample

and duplicates were removed before analysis. The respondents are completely

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[43] General population results were taken from from *Please Understand Me* by Keirsey and Bates. It should be noted that while trying to find a reliable source for this data, the percentage values were remarkably different from text to text.

anonymous to everyone but the server and, consequently, the webmaster. A time-dependent number is assigned for identification purposes, instead of using any personal information.

It was possible for a respondent to repeat the test, thereby entering two sets of data, but that is detectable by the webmaster and only one such incident of this occurred. The latter of the two datasets in this case was used for the analysis.

General Demographic Analysis

Table 4.2 displays the general demographic information of the survey respondents.

Table 4.2   Demographic Information

Demographic Information		Survey Respondents Answers
Age	Under 25	3%
	25 - 34	14%
	35 - 49	36%
	50 and Over	47%
Gender	Female	67%
	Male	33%
College Degree?	Yes	70%
Have you lived in the United States all of your life?	Yes	91%
	More than ten years	7.5%
	Ten years or less	.5%
	Five years or less	.2%
	Never	.2%
Shy?	Yes	26%
Construction Professional?	Yes	17%
Design Professional?	Yes	6%
Both Design and Construction Professional?	Yes	3%

The test had an overall respondent demographic that differs from the general

population in several areas that may be important to note. Females represented 67

percent of the respondents, versus a general population percentage of 51.[44] There

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[44] www.census.gov/

were significantly more college graduates than the general population percentage.[45]

Most of the respondents have lived in the United States for all of their lives. This was

considered an important demographic to sample as residential architectural

preferences are considered extremely culturally biased. A total of 21 percent of the

respondents are from the design or construction profession, which is also a much

higher percentage than is present in the general population. This is an intended result

as discussed earlier. The demographic data is used for analyzing the results with

respect to gender and age and is presented below.

Table 4.2 displays the personality type variations in the survey versus the

general population with respect to the Myers-Briggs results. Since the demographics

vary as discussed above toward female and college graduates, it is expected that the

percentages of types will vary. There appears to be a higher percentage of "SJs" and a

lower percentage of "SPs". According to the website

http://www.personalitypage.com/demographics, SJs are more educated than SPs on

the whole, which aligns with the difference in the statistics. Finally, the Introverts

outnumbered the Extroverts slightly, whereas in the Keirsey-Bates text it indicates

that the people who consider themselves extroverts usually outnumber the introverts

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[45] The United States Census Bureau in 2003 reported 27 percent of adults over 25 years of age
have a college degree, according to their website
http://www.census.gov/Press-Release/www/releases/archives/education/001863.html

by three to one. This is a notable difference in the percentage values of this survey as compared to the standard survey for Myers-Briggs personality determination.

Overall Preferences Comparison Data

The following table shows the preferences as averaged from all of the respondents survey results. These preferences will be used as a comparison basis for all other analyses. Where there are two preferences listed, the average values were within 0.05 points of each other, thus indicating a split in the preference.

Table 4.3 Overall Preference Data

% of Respondents	Façade		Interior		Plan	
	Most Liked	Least Liked	Most Liked	Least Liked	Most Liked	Least Liked
100	F2/F6	F4	I1	I3/I4	P3/P5	P1/P2

Verifying the Preferences for Complexity

The table below shows the overall preferences as they relate to the complexity of each element. "ML" stands for the most liked or highest average score, and "LL" stands for the least liked or lowest average score. A review of this table indicates a preference for the higher complexities for each element, and a low preference that falls in the moderate complexity range of our selections. Previously in the literature

review it was noted that existing research predicts preferences for moderately complex architectural designs. Comparing the survey data in Table 4.4 with this theory reveals that there was little preference for the elements with lower complexity, but it doesn't strongly support an overwhelming preference for the highest complexity elements. It might indicate that the elements used in this survey were closer in the subjective complexity range than other research selections, in other words, they were low to moderate range of complexity with no extremely complex elements to choose from.

Table 4.4 Verification of Preference for Complexity

Element	Complexity	Most Liked / Least Liked Selections
F1	11	
F2	18	ML
F3	14	
F4	14	LL
F5	19	
F6	20	ML
I1	18	ML
I2	10	
I3	6	
I4	13	LL
I5	15	LL
I6	9	
P1	12	LL
P2	16	LL
P3	19	ML
P4	11	
P5	16	ML
P6	12	

Analysis of Preferences for Introvert/Extrovert Trait

Table 4.5 below shows the data analysis after separating the respondents into introverts and extroverts. There are slight deviations to note, but if anything can be deduced from this data it is that the separation of the data using the introvert/extrovert bipolar trait shows no significant deviation in preferences from the patterns of preference for the total respondents. This is contrary to the assumptions found in the literature review that indicated there would be very different preferences between two individuals with opposite social tendencies.

Table 4.5 Introvert/Extrovert Preferences

% of Respondents	I/E	Façade		Interior		Plan	
		ML	LL	ML	LL	ML	LL
100%	All	F2/F6	F4	I1	I3/I4	P3/P5	P1/P2
43%	Extrovert	F2/F6	F4	I1	I4	P3	P1
57%	Introvert	F2/F6	F4	I1	I3/I4	P3/P5	P1/P2

Analysis of Preferences for Personality Types

The following tables present the most liked (ML) preferences for the respondents when separated by both Myers-Briggs personality types and Keirsey-Bates temperament types. What is most interesting is the consistent variation in all elements by one and possibly two temperament types. These areas are shaded within the table. Basically, the The overall preferences of the total respondent data is shown in each table as a reminder and doesn't vary. A quick look at each table reveals that the NT temperament preferences shows a variation from the overall preferences, especially when the Introvert/Extrovert trait is considered. Other variations are noted in detail below.

Table 4.6   Most-Liked Façade Preferences by Personality and Temperament Type

Personality Type (Myers-Briggs)	Most Liked Façade Preference	Temperament Type (Keirsey-Bates)	Most Liked Façade Preference	Total Respondent Preference
ESTP	F6			
ESFP	F2	SP	Split	Split
ISTP	F6			
ISFP	F2		F2/F6	F2/F6
ISTJ	F6			
ESFJ	F6	SJ	Strong	Split
ESTJ	F6			
ISFJ	F6		F6	F2/F6
INTP	F2			
INTJ	F2/F6	NT	Weak F2	Split
ENTJ	**F3**			
ENTP	**F4**			F2/F6
INFP	F2			
INFJ	F2/F6	NF	F2	Split
ENFP	F2			
ENFJ	F2/F6			F2/F6

ENT's preferred F3 or F4 instead of F2/F6 for everyone else. These façades are the

Georgian style house and the Southwest style house; both had a complexity rating of

14, or mid-scale. The F2 and F6 selections were higher in complexity. It would

appear then that the INT temperament preferred the higher complexity elements

contrary to what existing research would indicate. Interestingly, F4 was the overall

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least liked façade for all of the respondents as a whole, but the most liked for the

ENTP temperament, which is a striking variation.

Table 4.7   Interior Preferences by Personality and Temperament Type

Personality Type (Myers-Briggs)	Interior Preference	Temperament Type (Keirsey-Bates)	Interior Preference	Overall Preference
ESTP	I1	SP	I1	I1
ESFP	I1			
ISTP	I1			
ISFP	I5			
ISTJ	I1	SJ	Strong I1	I1
ESFJ	I1			
ESTJ	I1			
ISFJ	I1			
INTP	I5	NT	I5	I1
INTJ	I1			
ENTJ	I5			
ENTP	I5			
INFP	I5	NF	I5	I1
INFJ	I1			
ENFP	I1			
ENFJ	I1			

The other choice in Table 4.7 which emerges is I5, a symmetrical window arrangement that has slightly less glazing area than the overall preference of I1, is similar in design, and is the next step down the complexity scale from I1 which is the highest in complexity in this range of values. The NT and NF temperaments, especially the ENT's again, showed a distinct preference for I5, another lesser complexity selection like the facade preference variation, while the SJ temperament type overwhelmingly preferred the I1 selection.

Table 4.8   Plan Preference by Personality and Temperament Type

Personality Type (Myers-Briggs)	Plan Preference	Temperament Type (Keirsey-Bates)	Plan Preference	Overall Preference
ESTP	P3	SP	P5	P3/P5
ESFP	P5			
ISTP	P5			
ISFP	P5			
ISTJ	P3	SJ	Split P3/P5	P3/P5
ESFJ	P3			
ESTJ	P5			
ISFJ	P5			
INTP	P3	NT	Slight P3	P3/P5
INTJ	**P3/P4**			
ENTJ	P5			
ENTP	**P6**			
INFP	P3	NF	Slight P3	P3/P5
INFJ	P3			
ENFP	P5			
ENFJ	**P2**			

The plan preference variations shown in the shaded values once again deviate in the NT temperament and slightly in the NF temperament. Elements P4 and P6 are

in the low range of the selections' complexity scale for the plan elements. Element

P2, selected by the ENFJ personality type is in the middle range of the survey's

element complexity. Elements P3 and P5, the selections generally preferred by the

respondents, are the two highest complexity elements in the plan portion of the

survey. So once again the variation in preference is within the NT and NF

temperament types and where the preferences tended to be towards elements with

lower complexity values than the general respondent's preference.

What is starting to be evident is that by grouping the respondents into

temperament types instead of the sixteen personality types or the simple

introvert/extrovert bipolar trait, different patterns in preferences start to emerge

primarily for the NT temperament, but also somewhat for the NF temperament. There

are some other minor variations, but none as consistent as the those appear to be.

If these results can be viewed in a different way, then perhaps a clearer

understanding can be had as to what the different patterns may be for the NT and NF

temperaments. All of the data was arranged in graphical formats to see if there

emerged any other patterns to consider further. A few of the graphs observed

revealed the same variations as noticed in Tables 4.6, 4.7 and 4.8 presented earlier in

this chapter.

The following graphical representations of the preference patterns display the

NT and NF patterns that appear to differ from the general preference patterns.

Figure 4.1 Facade Preferences for Temperament Type
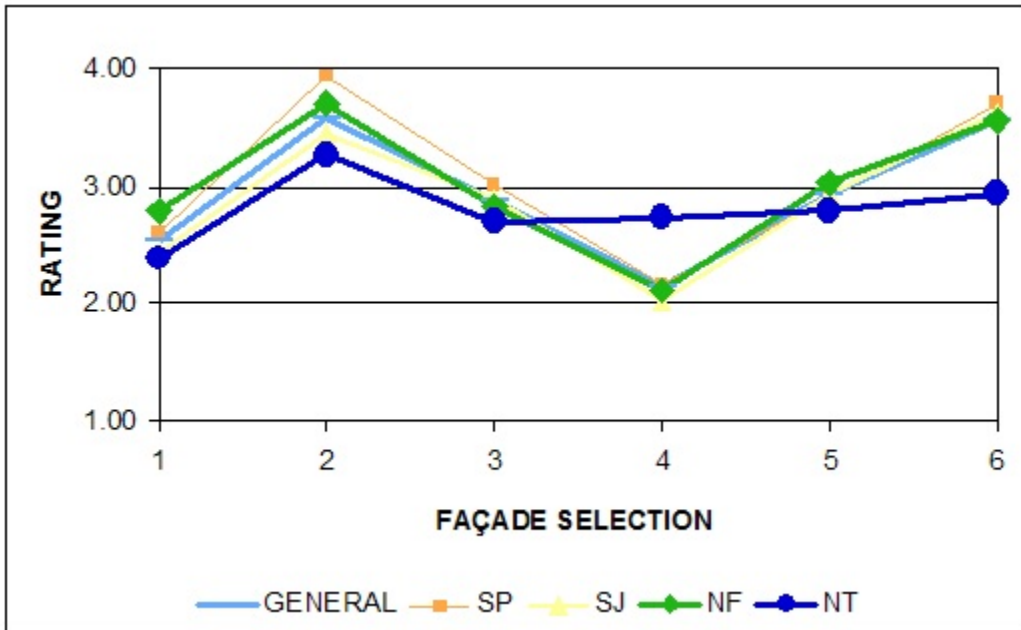
For the facade preference, each of the temperaments, (SP, SJ, NF, NT) is mapped onto a scale of the average rating (1-4) on the y-axis as graphed per each selection number, F1-F6. What can be seen in Figure 4.1 is a lower preference score for most of the facade selections, and a deviation in rating from the least liked selection F4 for the NT temperament. The graph was then further divided into the introverted NT's and the extroverted NT's to attempt to visually confirm the data presented in tabular format above. With the temperament data separated into the bipolar I/E trait categories the resulting graphical data shows that the extroverted NT temperament is mostly responsible for the deviation in the pattern of preferences for facades. In fact there is very little preference shown for any of the selections for facades by the

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extroverted NT temperament. This is represented in Figures 4.2 ad 4.3 below. For the

F2 selection, where the introverted and extroverted NT's differ noticeably, the

introverted NT's preferred the more complex F2 selection more than the extroverted

NT's did.

Figure 4.2 Facade Preferences for Introverted NT & NF Temperaments
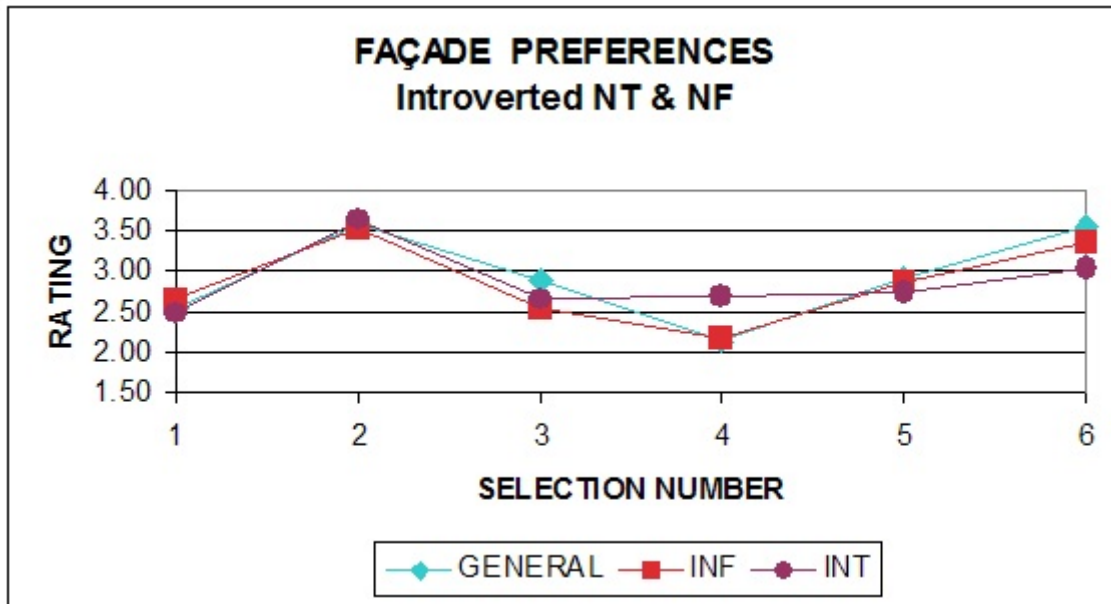
Figure 4.3 Facade Preferences for Extroverted NT & NF Temperaments

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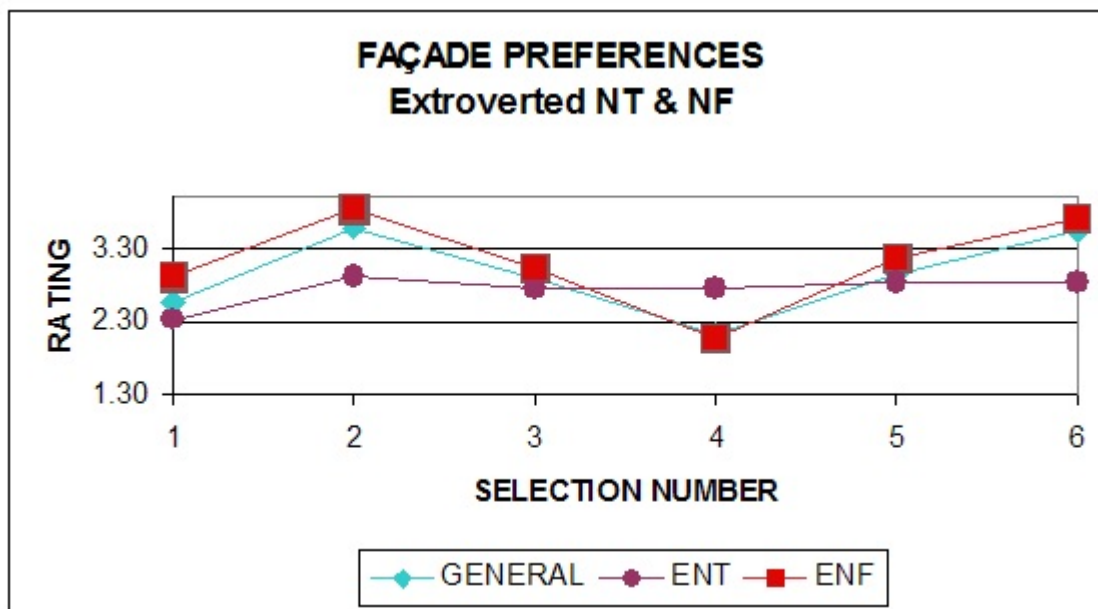
A slightly different result appears in the graphical representations for the NF temperament to differ in the preference pattern for the interior elevations. It was noted earlier in Table 4.7 that the NF's preferred a different interior elevation selection than the other temperaments. If the same separation into the introverted and extroverted trait is applied to the NF and NT preference patterns graphically as was done for the facade preferences, it appears that the introverted NT's are responsible for the variation in preference from the I1 selection to the I5 selection as shown in Figures 4.4's and 4.5. I5 is a higher complexity selection than I1, so in this case the introverted temperament preferred a higher complexity selection thus further challenging the assumption that introverted persons would much prefer architectural elements lower in complexity.

Figure 4.4 Interior Elevation Preferences for Introverted NT & NF
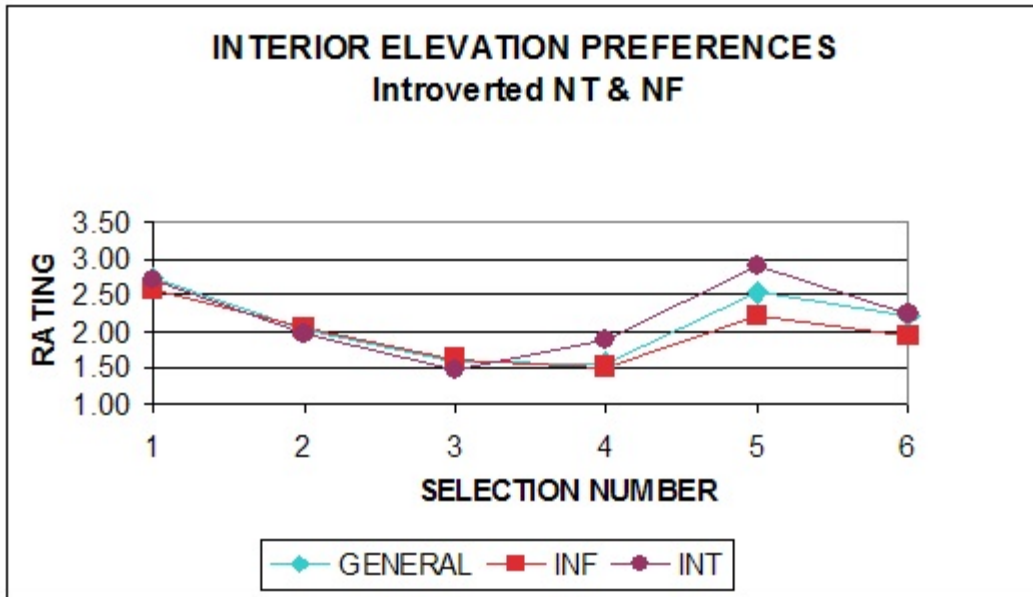
Temperaments

Figure 4.5 Interior Elevation Preferences for Extroverted NT & NF
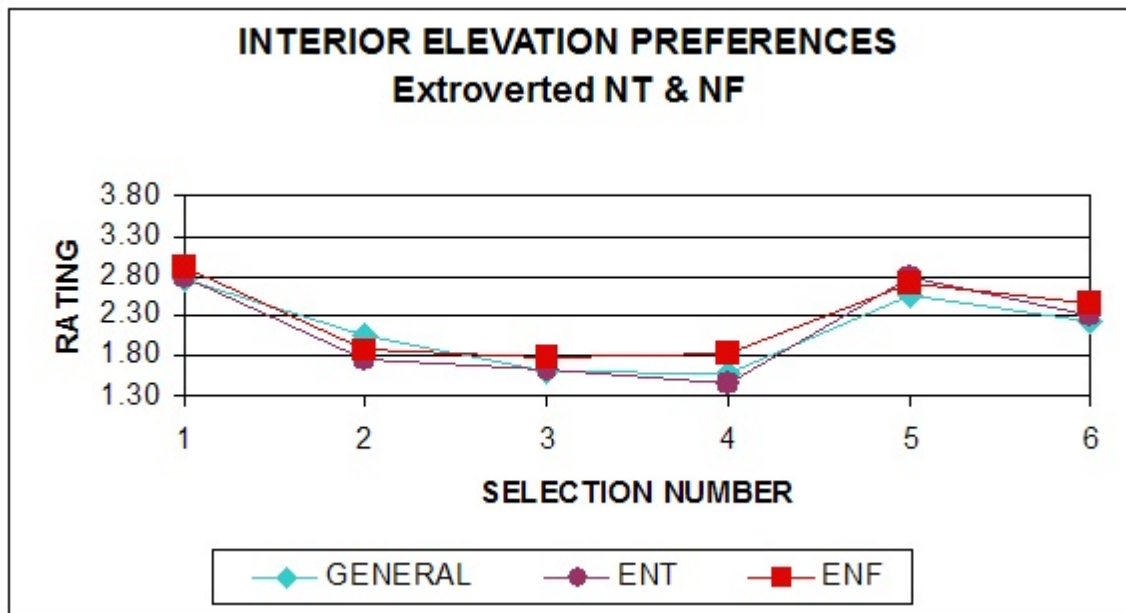
Temperaments

Finally, with a graphical view of the plan preference pattern variations for the NT temperament mentioned above another curious pattern emerges. As shown in Figures 4.6 and 4.7 below, the introverted NT's show a stronger like and dislike than their extroverted counterparts. The same can be said for the NF's from this graph as well. This result is not as obvious in the tabular presentation of the data. Also upon closer observation of Figures 4.2 through 4.5 it appears that the introverted temperaments display stronger likes and dislikes for all of the selections than do their extroverted counterparts.

Figure 4.6 Plans preferences for Introverted NT & NF Temperaments
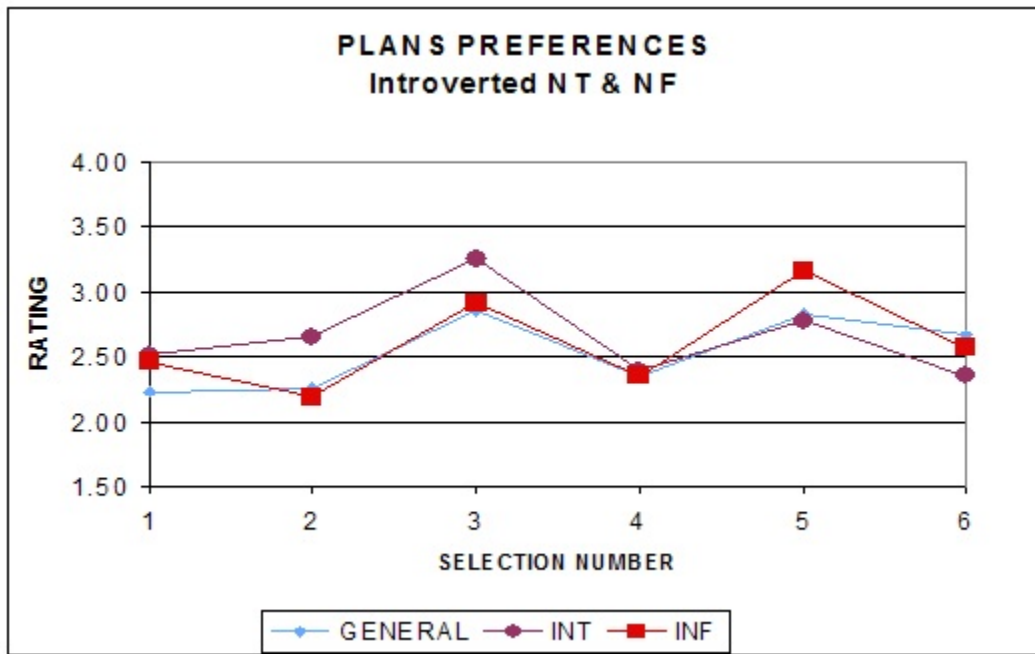
Figure 4.7 Plans Preferences for Extroverted NT & NF Temperaments
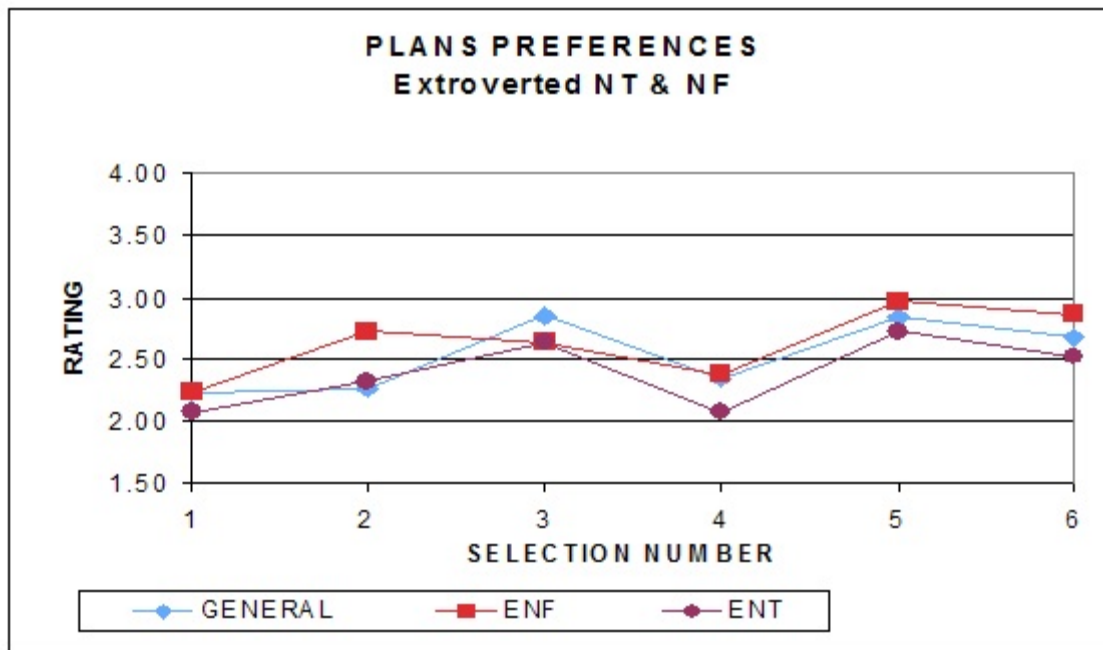
Gender-Based Preference Patterns

Deviating from the notion of patterns in personality type preferences, the
observation of patterns via the separation of the data by demographics can be seen in
a couple of the more obvious typologies of respondents. Gender is one that has
already been noted as causing distinct differences in architectural preferences.[46] The
gender based preferences don't vary from the overall preferences significantly, but
what is interesting to note is that they do differ from each other as shown in Table 4.9.

Table 4.9 Gender Based Preference Patterns

		Façade		Interior		Plan	
		ML	LL	ML	LL	ML	LL
100%	All	F2/F6	F4	I1	I3/I4	P3/P5	P1/P2
33%	Male	F2	F4	I1	I4	P3	P2
67%	Female	F6	F4	I1	I3	P3/P5	P1

What is consistent in the differing preferences is the overall preference for
more complex façade selections (F6 has a slightly higher complexity value than F2)
by females and the stronger dislike of complexity in the interior and plan selections
by the males. Stated another way, I4 and P2, the least liked elements by males, are

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[46] Cooper Marcus

moderate in complexity values while I3 and P1, the least liked elements by females, are low in complexity for the selections (13 and 16 vs. 6 and 12).

Age-Based Preference Patterns

Since little research was found that correlated the preferences of older persons to architectural elements, this seemed like a demographic that would be worth reviewing in the context of this research. Any pattern at all would be something to note that could have significant implications on the design process and give the designer more of a starting point than just the basics that concern most all older persons. The data analysis did reveal some interesting variations from the general trends that might provide some insight.

Table 4.10 Age-Based Preference Patterns

		Façade		Interior		Plan	
		ML	LL	ML	LL	ML	LL
100%	**All**	F2/F6	F4	I1	I3/I4	P3/P5	P1/P2
4%	**< 25**	F2/F6	F4	**I6**	I3	**P6**	P2
14%	**25 - 34**	F2/F6	F4	I1	I3	P3	P2
36%	**35- 49**	**F6**	F4	I1	I3/I4	P3/P5	P1
46%	**50 +**	**F6**	F4	I1	I4	P3/P5	**P4**

From Table 4.10 above, it can be noted that there is a clearer preferences for façade F6, in this case the Victorian façade, with the higher age groups as evidenced by the lack of a split in the preference. F6 is also the most complex design element. Also interesting to note that at the highest age group, the least liked preference for the plan element, P4, deviates from all of the rest of the preferences. P4 is the least complex of the plans. So it could be stated that in the highest age group there appears to be a clearer preference for the a facade of greater complexity and a clearer dislike for a lower complexity plan, while the interior element preferences are similar to the other age groups.

For the under 25 age group the interior and plan most liked preferences deviated from the other age groups' preferences. The youngest age group preferred I6 vs. I1 and preferred P6 to P3/P5. I6 and P6 are lower in complexity than the overall preferred selections.

Therefore, potentially, the younger respondents appeared to prefer interior views and plans lower in complexity than the other age groups and the older respondents preferred facades of higher complexity than the other age groups. Given that the younger respondents tested more extroverted than the older respondents, it appears that this result also challenges the assumption found in the literature review that extroverts would prefer more complexity in architecture than introverts.

CHAPTER FIVE

CONCLUSIONS

This research, although not producing any overwhelming statistical data to support a strong correlation between personality and preference, has set up a few interesting results that might be worth further consideration. It also confirms a few of the previously researched ideas about preference.

The main points of interest arising from this research are:

1. Analysis of a simple separation of introvert and extrovert personality trait and its associated data did not reveal any particular patterns of preferences. This appears to be in direct contrast to many theories, casual and otherwise, on personality and preferences for architectural elements. If the single bipolar trait of introversion and extroversion is not enough to predict preference then the question becomes a bit more complex and the subtleties of qualifying architectural element preferences harder. There also did not appear to be any consistent correlation between the I/E trait and complexity of the selections. A slight preference for exactly the opposite of the popular theories was

observed after observing the data for certain temperaments split into the bipolar I/E trait categories. That is for the temperament type NT, it was noted in a graphical presentation of the survey results that the introverted NT's may slightly prefer elements that were more complex than the extroverted NT's. This counters the assumption noted in the literature review about extroverts and introverts preferring more and less complexity, respectively.

2.   Using the Keirsey-Bates temperament theory of personalities, preference patterns which were different from the general respondents' preferences were evident for the temperament of NT and somewhat evident for the NF temperament. The preference patterns for NT's for the façades indicated that there was no clear preference between any of the selections, especially for the extroverted NT's. The Keirsey-Bates text describes the NT's as architects and scientists, who are compelled to rearrange their environment. Therefore, if one group were to have been predicted to deviate, based on a description of temperament type, it might easily have been the NT's since their temperament is described as the most environmentally sensitive. In fact, the Keirsey-Bates text sites the most famous NT as Howard Roarke, the architect protagonist in Ayn Rand's "The Fountainhead". This alone is interesting

enough to warrant another attempt at correlating architectural preferences and the aspect of personality known as temperament type.

3. Regardless of personality, degree of extroversion or temperament type, the respondents did prefer elements that were higher in complexity, based on a simple measure of complexity for all elements. Since it could be argued that none of the elements was extremely complex mathematically, this result might therefore indicate at least a general dislike for the elements that were lower in complexity. Verifying preferences for varying complexities wasn't the focus of this research, but as stated in the literature review, previous research has shown that subjects prefer objects in the moderate ranges of complexity.

4. Demographic differences appear to generate preference patterns for architectural elements that while suspected by design professionals and explored in other ways, are also not yet fully captured in evidence-based design research. Studies concerned with age and gender demographics and preference correlation appear to stop at the house defined as a single entity in the midst of a neighborhood, instead of assessing preferences for the individual parts of the house that make up the whole. The following results

for gender and age show patterns that are worth mentioning and certainly

worth more attention than they have been given in the past.

(1)   Gender based preference differences were evident and indicated

that females prefer designs that are more complex. The gender

categories also clearly differed with each other in every element

category for either the most liked or the least liked.

(2)   Age based preference differences were also noted between the

youngest and oldest respondents, while the middle age range

paralleled the general respondent preferences. Contrary to what

might be suspected, younger respondents, who were also

percentage-wise more extroverted, preferred less complex plans

and interior elevations than did the older respondents.

Complementing that finding was the observance that the older

respondents, who have been noted to become more introverted

as time passes, preferred the more complex facades. This result

continues to refute the previously discussed assumption that

extroverts would prefer more complexity because they need the

additional stimuli to feel satisfied.

So given the lack of substantial data linking personality to preference in this research effort, this research actually produced potentially fertile topics to explore further, but did not produced any overwhelming evidence or conclusive results to aid future designers. It has merely indicated preference patterns, that are interesting to note and seem to contradict commonly held notions of personality and architectural preferences. If further research were to be conducted control factors to consider in a new methodology might include the strict use of elements of consistent complexity while varying another visual component of the element or de-emphasizing complexity in favor of varying the value of order of a particular style. While this research employed the Myers-Briggs testing method for identification of the personality categories, other methods for defining personality, such as a more focused temperament assessment, or using the "Big Five" personality traits as mentioned in the literature review, could be used. Other research concerned with the built environment has successfully used the "Big Five" personality trait identification methodology instead of the Myers-Briggs methodology and this might offer new insights to this thesis question. Since we have apparently ruled out the trait of extroversion as having an overwhelming influence on architectural element preferences, there would then be only four of the "Big Five" left to assess: agreeableness, conscientiousness, emotional stability, and openness to experience.   Given the number of different ways that this test could be repeated by varying the elements' composition, by

varying the personality assessment methodology, by filtering for other demographics or by changing the data collection techniques, this was by no means an exhaustive study of the proposed thesis statement. The data collection methodology, whatever the means, would best be had by the simplest, most revealing assessment possible, so as not to demand that the architect be a trained psychologist as well.

Finally, this research implies that perhaps with other research methodologies, specific preference patterns might be unearthed based on the definition of temperament by Keirsey - Bates. If further more rigorous research proved fruitful, then temperament, and perhaps other characteristics of the person such as age and gender could form a separate design programming criteria in addition to the impersonal cost, schedule and location criteria currently used.   If the architectural design process could begin with a subset of choices specifically chosen for the individual based on the person's inner character and the outwardly social constraints, then the process might become much more efficient, certain, and valuable to the consumer. The resulting residence would then be a reflection of the client's inner true self and their outer social self, and optimally be the merging of dreams and reason into architecture that is truly a perfect fit, restorative, efficiently designed and so much more than it is at present, because, in addition to being merely custom-designed, it would be custom-fitted.

CHAPTER SIX

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LIST OF APPENDICES

Appendix A   **Survey Detail**

Appendix B   **Architectural Elements Graphics**

Appendix C   **Original Data**

Appendix D   **Data Analysis Spreadsheets**

Appendix E   **WSU Human Subject Research Approval**

APPENDIX A

M. Sc. in Architecture Thesis

Kristyn Clayton

Washington State University Spring 2006

Personality and Architectural Preferences

The purpose of this research is to assess the predisposition of individual architectural preference with respect to personality types. It is part of the research for a Masters of Science Thesis in Architecture for Kristyn Clayton.

The survey is completely anonymous and the results will not be assessed individually. By taking this survey you are implying consent to a voluntary data collection research activity intended only for purposes of writing a Masters thesis. This study has been reviewed and approved by the WSU Institutional Review Board (IRB).

If you have questions about your rights as a participant please contact the WSU IRB at (509) 335 7951 or at:

irb@wsu.edu

This survey has been divided into two parts.

Part one is a personality test based on Jung-Myers-Briggs typology. Part two is an architectural preference survey. This web page will guide you through the survey. This entire survey shouldn't take more than ten minutes.

Should you have any questions before or after the test please feel free to contact me at (509) 430 2159 or by email:

kristynclayton@charter.net

Continue

Answers to Online Survey

Please answer the following questions:

Are you a design professional?   Yes   No

Are you a construction professional?   Yes   No

Are you male?   Yes   No

Are you under 25?

Do you have a college degree?   Yes   No

Do you consider yourself shy?   Yes   No

Have you lived in the USA: All my life

Continue

The first preference has to do with how you're **ENERGIZED**. Take a minute to look these two options over and give it some serious thought....

Column A	Column B
Tolerate noise and crowds.	Avoid crowds and seek quiet.
Talk more than listen.	Listen more than talk.
Communicate with enthusiasm.	Keep enthusiasm to self.
Be distracted easily.	Concentrate well.
Meet people readily and participate in many activities.	Proceed cautiously in meeting people participate in selected activities.
Blurt things out w/o thinking.	Think carefully before speaking.
Hates to do nothing. On the go.	Time alone to recharges batteries.
Likes working or talking in groups	Would prefer to socialize in small groups or just do job " by myself."
Likes to be center of attention.	Content being on the sidelines.
Now, think carefully. You might want to say you're both. We all are. But the key is, "what are you more **COMFORTABLE** doing?" Go with your instinct, and pick what you feel is the best answer.	
Choice A	Choice B

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These preferences have to do with how you GATHER information...or what you pay attention to. Try to forget about the way the words are usually used.

Column A	Column B
Learn new things by imitation and observation.	Learns new things through general concepts.
Value solid, recognizable methods achieved in step-by-step manner.	Value different or unusual methods achieved via inspiration.
Focus on actual experience	Focus on possibilities.
Tend to be specific and literal; give detailed descriptions.	Tend to be general and figurative; use metaphors and analogies.
Behave practically.	Behave imaginatively.
Rely on past experiences.	Rely on hunches.
Likes predictable relationships.	Values change in relationships.
Appreciates standard ways to solve problems.	Use new and different ways to solve problems and teach solutions.
Methodical.	Leap around in a roundabout way.
Value realism and common sense.	Value imagination and innovation.
Again, we all gather information in both ways. But one way is used more often. Try to think about which one you feel most **comfortable** with.	
Choice A	Choice B

This category deals with how we make decisions and reach conclusions...

Column A	Column B
Have truth as an objective.	Have harmony as a goal.
Decide more with my head.	Decide more with my heart.
Question others' findings, 'cause they might be wrong.	Agree more with others' findings, 'cause people are worth listening to.
Notice ineffective reasoning.	Notice when people need support.
Choose truthfulness over tactfulness.	Choose tactfulness over truthfulness.
Deal with people firmly, as needed	Deal with people compassionately.
Expect world to run on logical principles.	Expect the world to recognize individual differences.
Notice pros & cons of each option.	Note how an option has value and it affects people.
See others' flaws... critical.	Like to please others; show appreciation.
Feelings valid if they're logical.	ANY feeling is valid.
Tolerate occasional queries as to my emotional state in relationships	Appreciate frequent queries as to my emotional state
Get the picture? Which one just jumps out as "more like you"?	
Choice A	Choice B

A-5

This one has to do with the LIFESTYLE you adopt.

Column A	Column B
Prefer my life to be decisive, imposing my will on it.	Seek to adapt my life and experience to what comes along.
Prefer knowing what they're getting themselves into	Like adapting to new situations.
Feel better after making decisions	Prefer to keep things open.
Enjoy finishing things.	Enjoy starting things.
Work for a settled life, with my plans in order.	Keep my life as flexible as possible so that nothing's missed.
Dislike surprises & want advance warnings.	Enjoy surprises and like adapting to last-minute changes.
See time as a finite resource, and take deadlines seriously.	See time as a renewable resource, and see deadlines as elastic.
Like checking off "to do" list.	Ignore "to do" list, even if you made one.
Feel better with things planned.	Would rather do whatever comes along.
Settled. Organized.	Tentative. Flexible. Spontaneous.
Again, you get the picture. So, which one just "more like you" like an old pair of jeans?	
Choice A	Choice B

A-6

Example

How well do you like this style of chair?
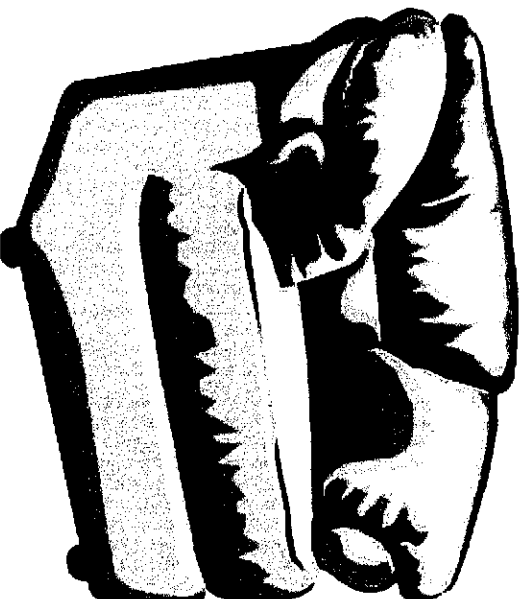
| I don't like it at all | I like it somewhat | I like it better than most | I like it a lot, but might not choose to buy it | I really like it and would buy it |

Continue

How well do you like this style of home?

| I don't like it at all | I like it somewhat | I like it better than most | I like it a lot, but might not want to live in it | I really like it and would like to live in it |

Continue

How well do you like this as a bedroom window arrangement?

I don't like it at all	I like it somewhat	I neither like it nor dislike it	I like it better than what I have now	I really like it and wish it were in my bedroom

Continue

How well do you like this bedroom arrangement?

A-10

I don't like it at all	**I like it somewhat**	**I like it the same as what I have now**
		I like it better than what I have now
		I love it and wish it were my house

Continue

How well do you like this bedroom arrangement?

Continue

| I don't like it at all | I like it somewhat | I like it the same as what I have now | I like it better than what I have now | I love it and wish it were my house |

A-11

How well do you like this bedroom arrangement?

Continue

I don't like it at all	I like it somewhat	I like it the same as what I have now	I like it better than what I have now	I love it and wish it were my house

A-12

How well do you like this as a bedroom window arrangement?

| I don't like it at all | I like it somewhat | I neither like it nor dislike it | I like it better than what I have now | I really like it and wish it were in my bedroom |

Continue

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A - 13

How well do you like this style of home?

Continue

I don't like it at all

I like it somewhat

I like it better than most

I like it a lot, but might not want to live in it

I really like it and would like to live in it

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A-14

How well do you like this style of home?
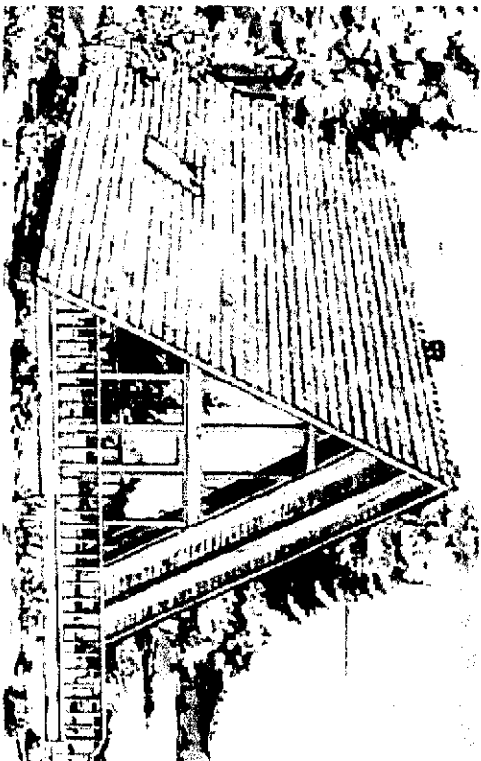
I don't like it at all

I like it somewhat

I like it better than most

I like it a lot, but might not want to live in it

I really like it and would like to live in it

Continue

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A ~ 15

How well do you like this style of home?

I don't like
it at all

I like it
somewhat

I like it better
than most

I like it a lot, but might
not want to live in it

I really like it and
would like to live in it

Continue

A~16

How well do you like this as a bedroom window arrangement?

I don't like it at all	I like it somewhat	I neither like it nor dislike it	I like it better than what I have now	I really like it and wish it were in my bedroom

Continue

How well do you like this bedroom arrangement?

BDRM 2

CLOS

BATH

BATH

CLOS

BDRM 1

I don't like it at all	I like it somewhat
I like it the same as what I have now	I like it better than what I have now
I love it and wish it were my house	

Continue

A-18

How well do you like this style of home?

I don't like   I like it   I like it better   I like it a lot, but might   I really like it and
it at all   somewhat   than most   not want to live in it   would like to live in it

Continue

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A-19

How well do you like this style of home?

I don't like it at all

I like it somewhat

I like it better than most

I like it a lot, but might not want to live in it

I really like it and would like to live in it

Continue

A-20

How well do you like this as a bedroom window arrangement?
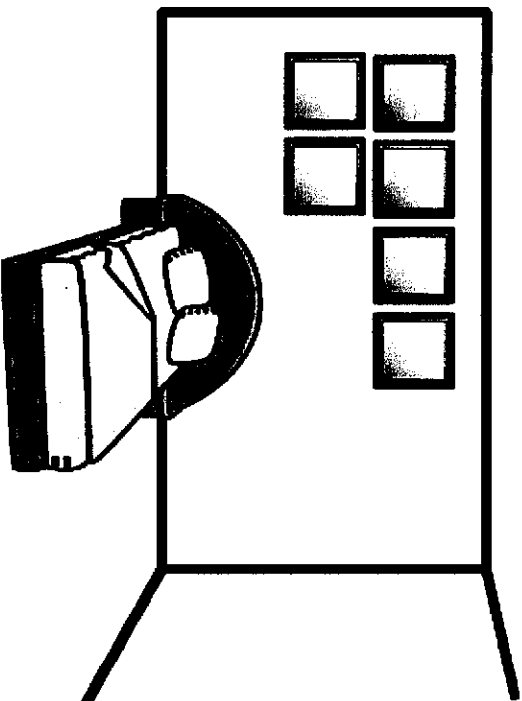
| I don't like it at all | I like it somewhat | I neither like it nor dislike it | I like it better than what I have now | I really like it and wish it were in my bedroom |

Continue

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A-21

How well do you like this bedroom arrangement?

Continue

| I don't like it at all | I like it somewhat | I like it the same as what I have now | I like it better than what I have now | I love it and wish it were my house |

A-22

How well do you like this as a bedroom window arrangement?

| **I don't like it at all** | **I like it somewhat** | **I neither like it nor dislike it** | **I like it better than what I have now** | **I really like it and wish it were in my bedroom** |

Continue

How well do you like this as a bedroom window arrangement?

| I don't like it at all | I like it somewhat | I neither like it nor dislike it | I like it better than what I have now | I really like it and wish it were in my bedroom |

Continue

How well do you like this bedroom arrangement?

BATH

CLOS

BDRM
1

BATH

BDRM
2

CLOS

| I don't like it at all | I like it somewhat | I like it the same as what I have now | I like it better than what I have now | I love it and wish it were my house |

Continue

A-95

Thank you very much

Thanks for your help on this research. Results will be emailed out in the late summer of 2006 if you are interested. Your email will only be used to send out the results of the survey (we promise).

Email address:

Continue

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APPENDIX B

ARCHITECTURAL ELEMENTS
GRAPHICS

APPENDIX B

F1

F2

F3

F4

F5

F6

I1

I2

I3

I4

I5

I6

P1

P2

BDRM 2

CLOS

BATH

CLOS

BATH

BDRM 1
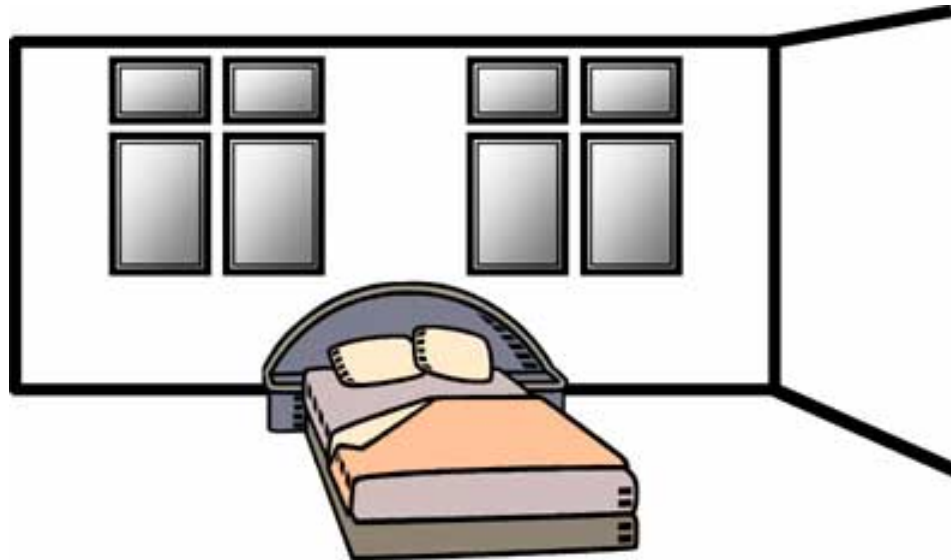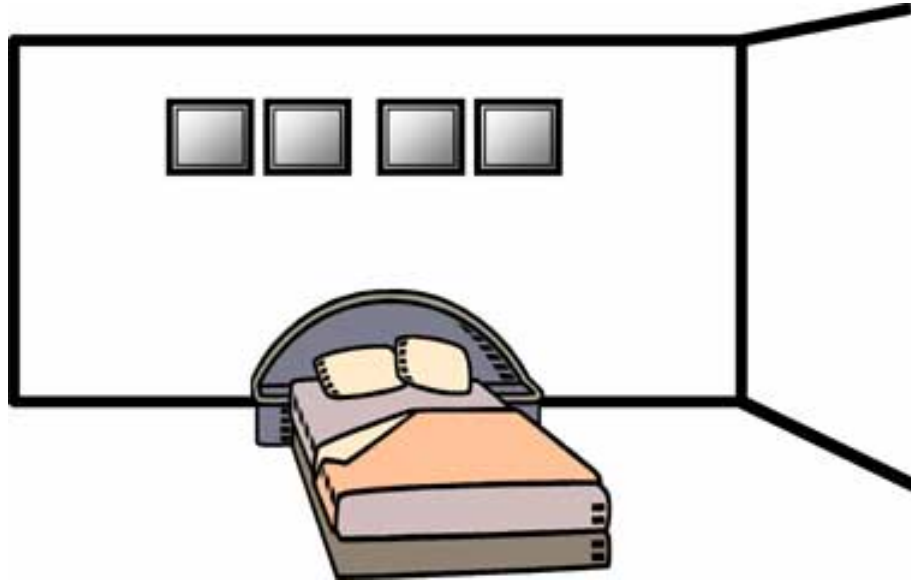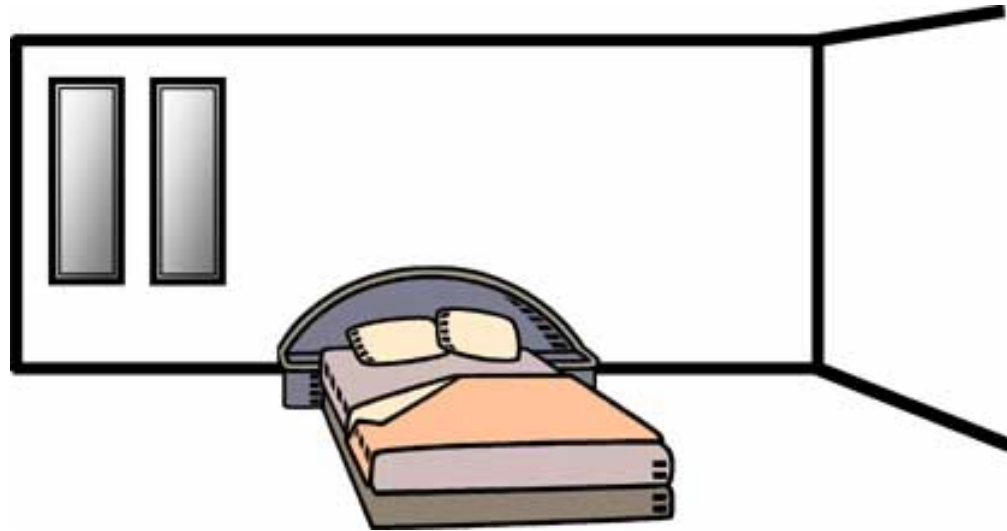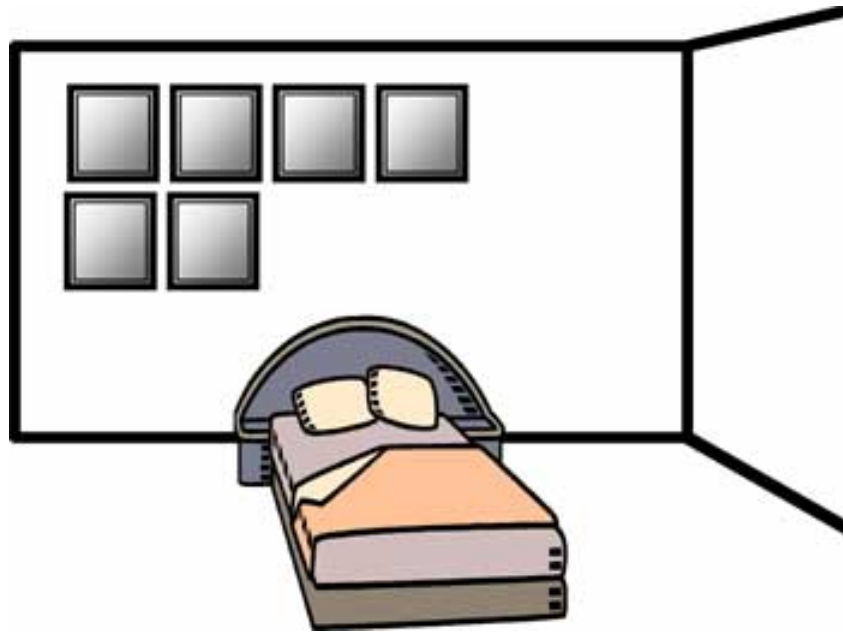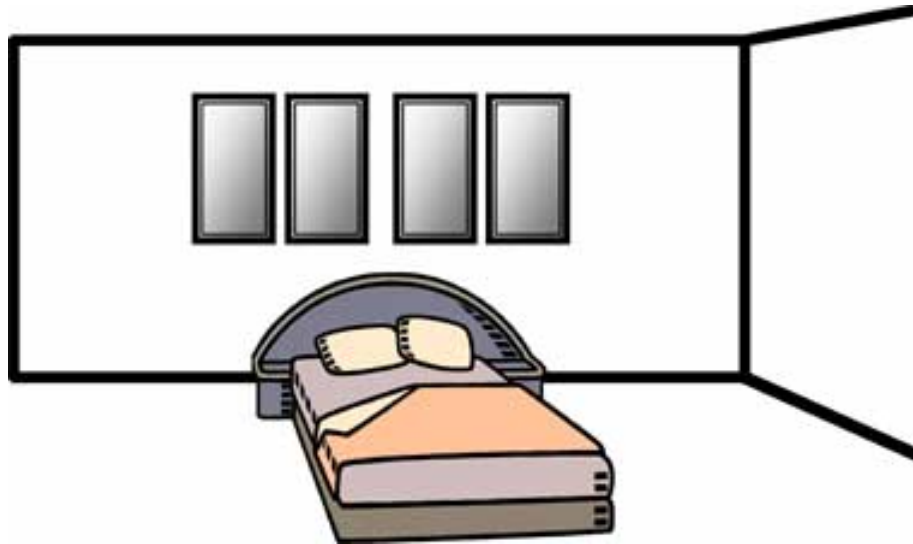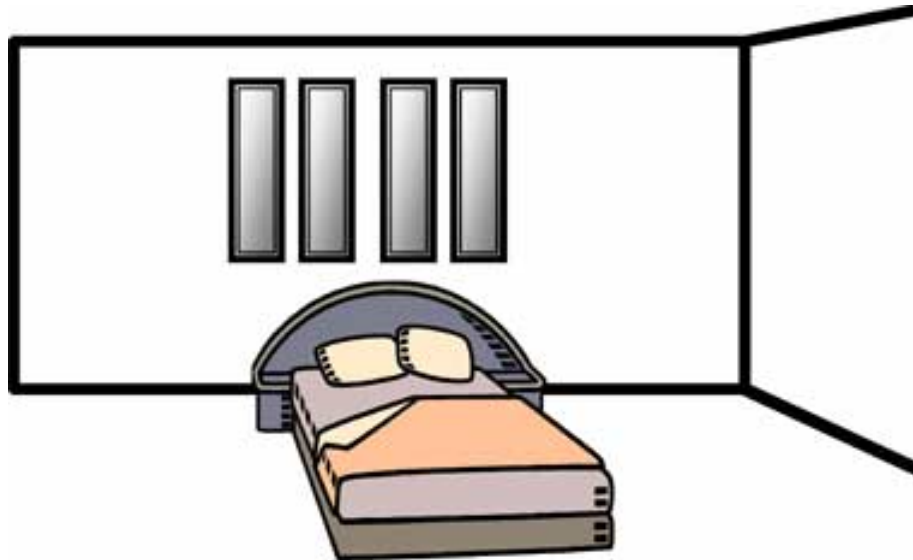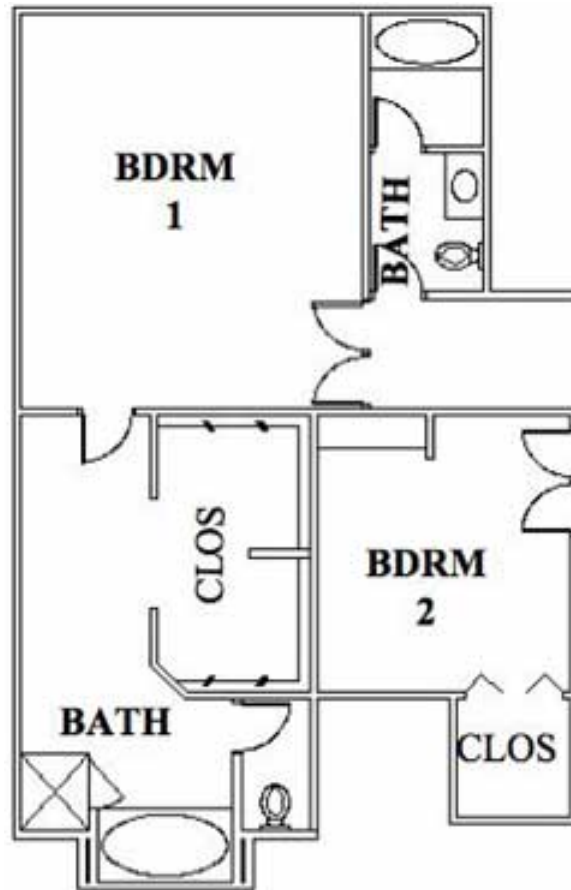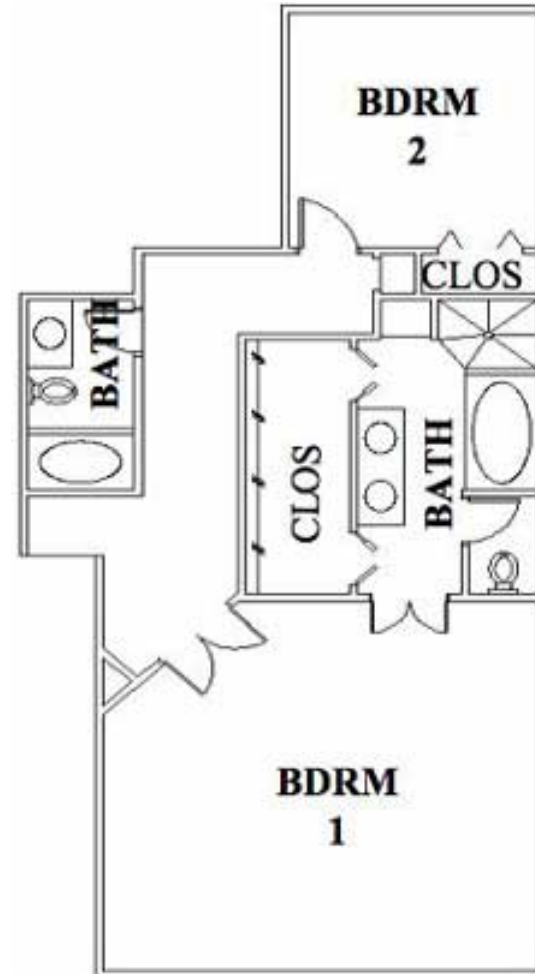
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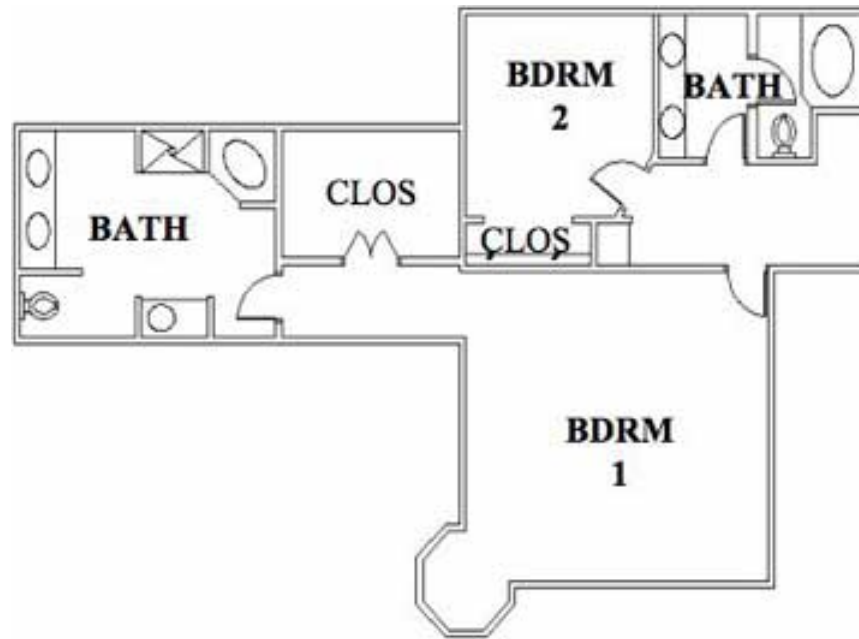
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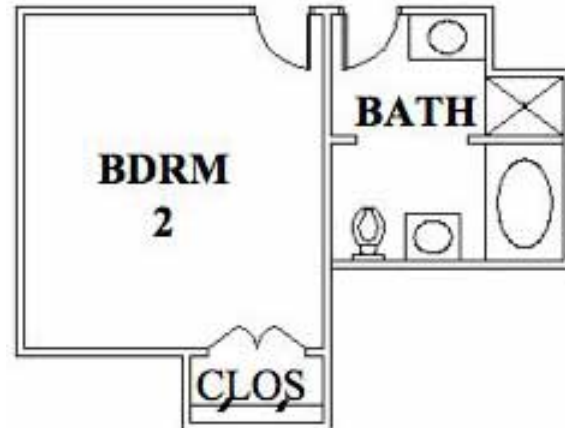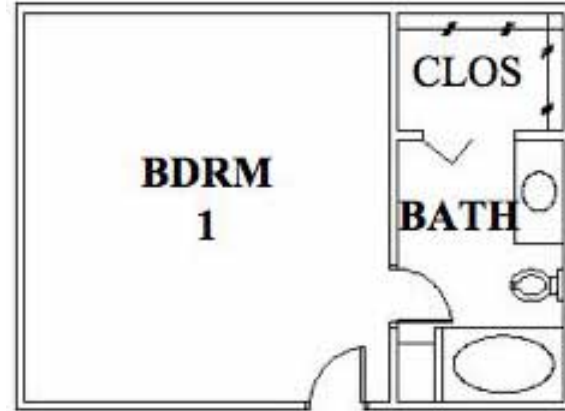
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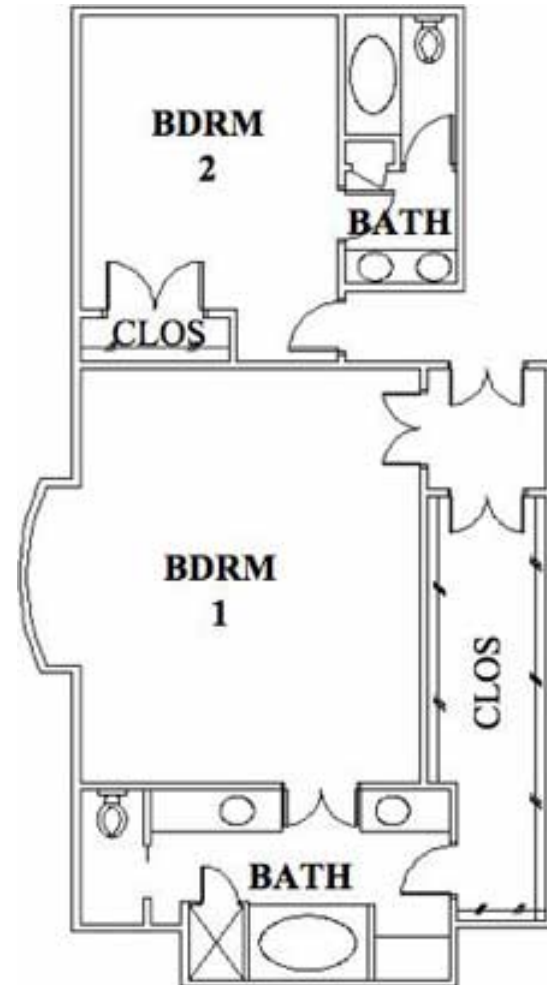
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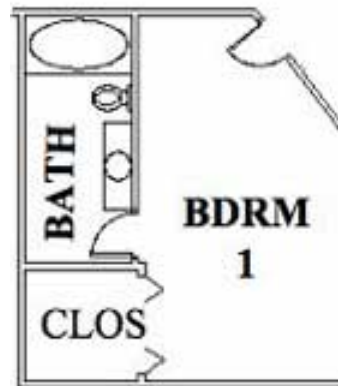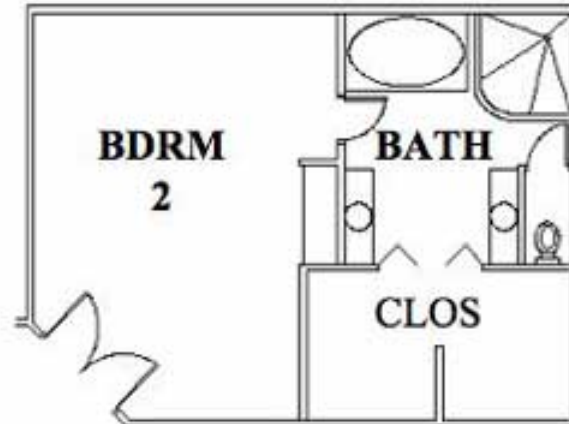
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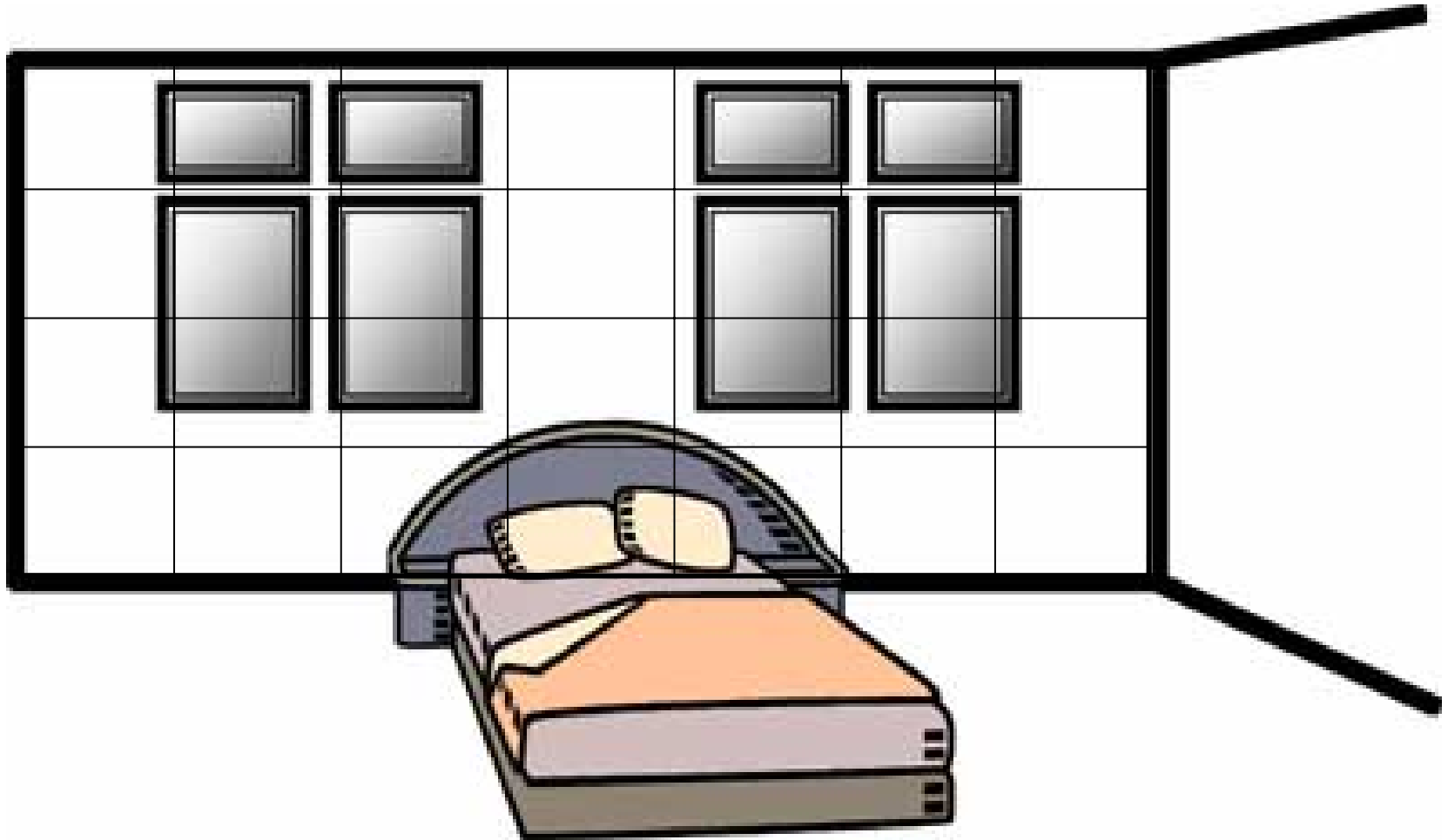
I1- 18 BOXES
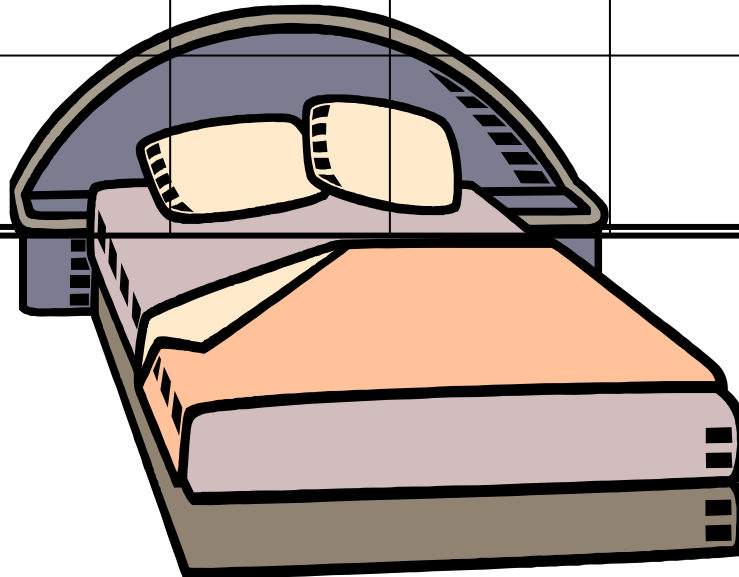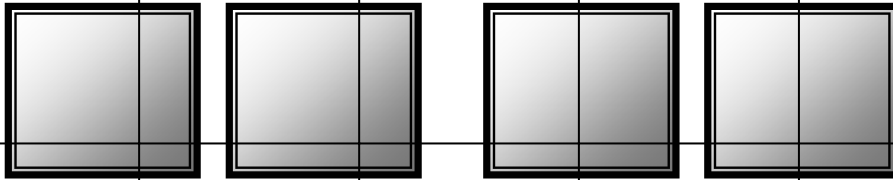
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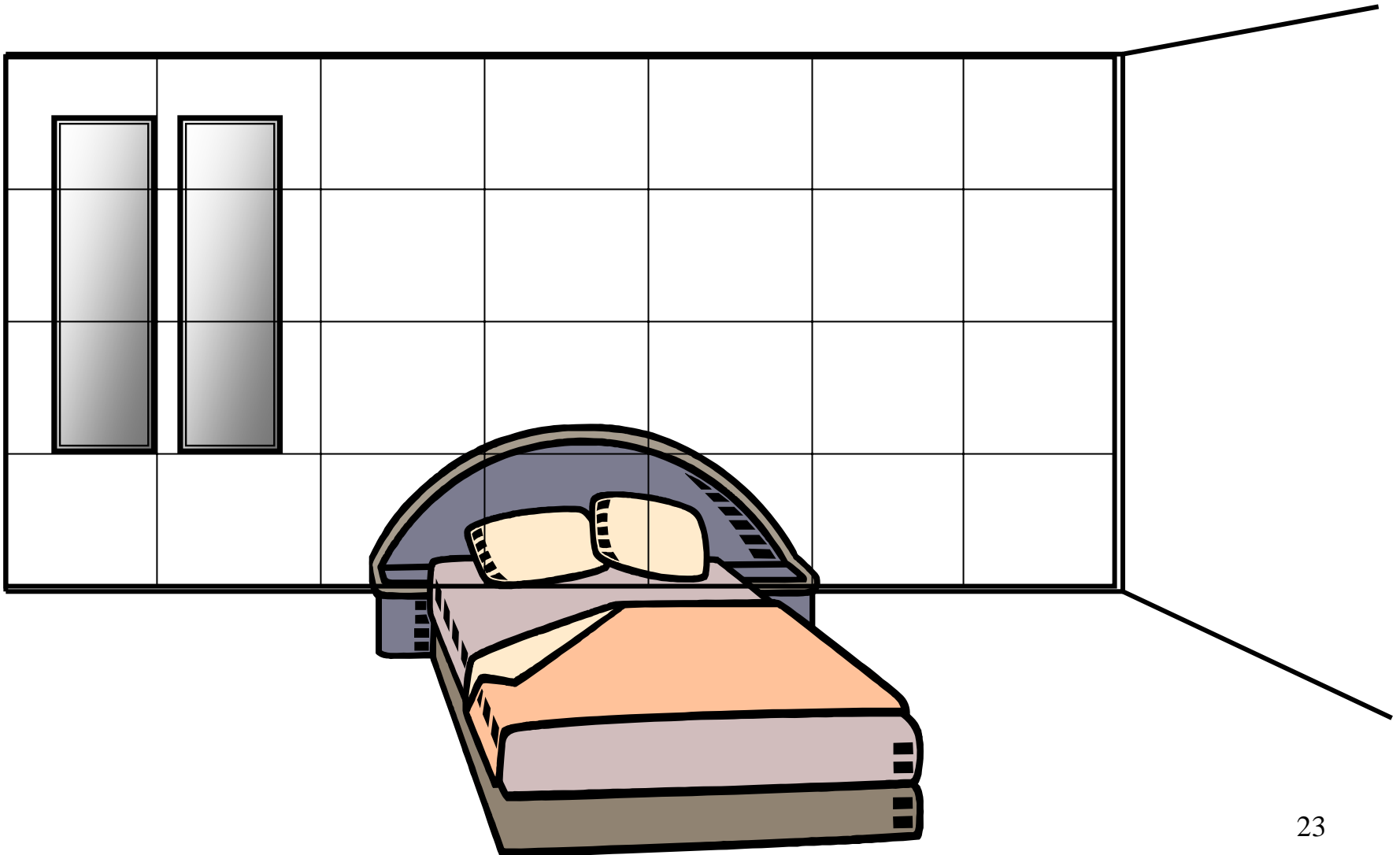
I4 – 13 BOXES
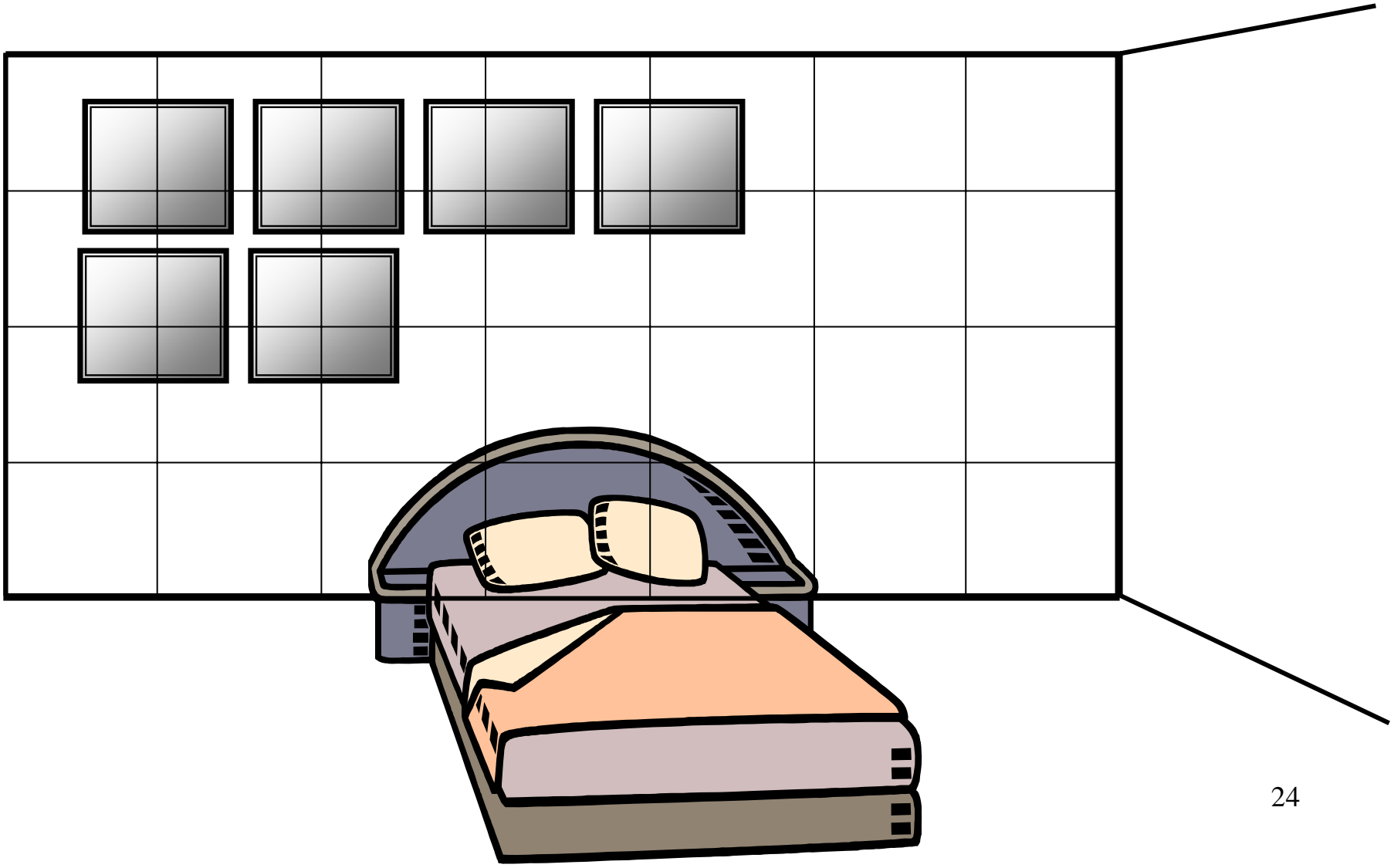
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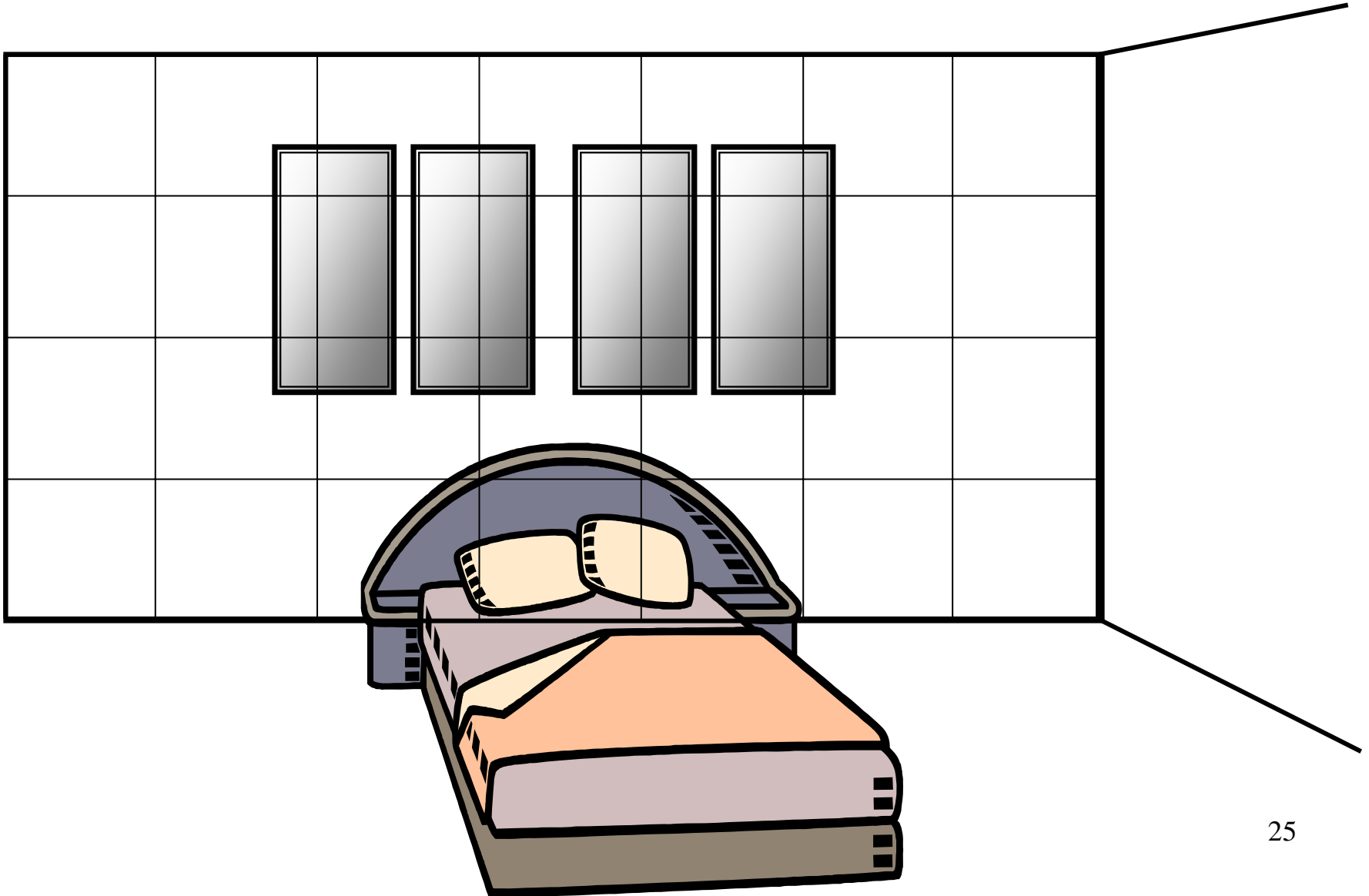
I6 – 9 BOXES
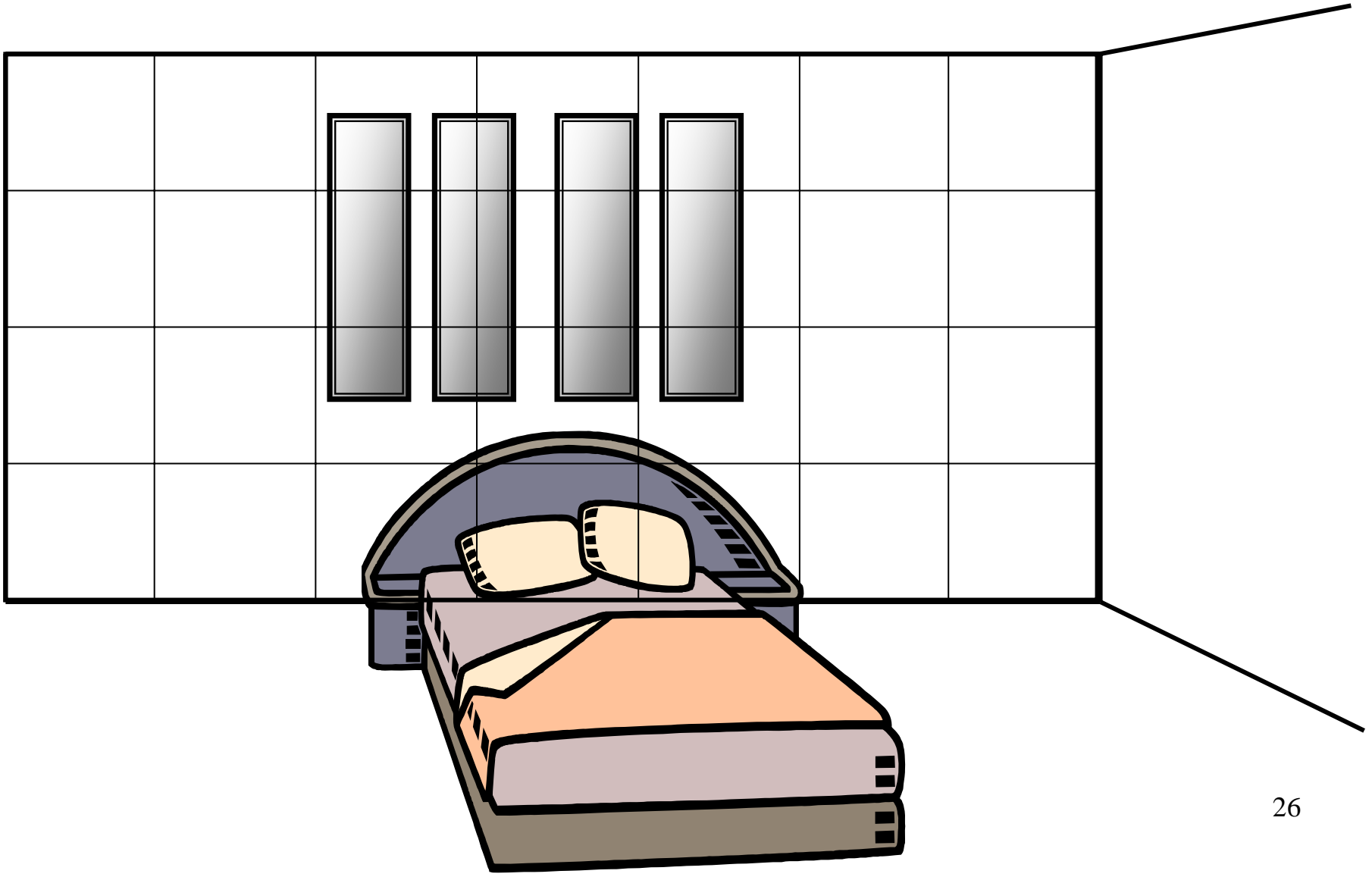
FLOOR PLAN COMPLEXITY TECHNIQUE

MASTER

BDRM
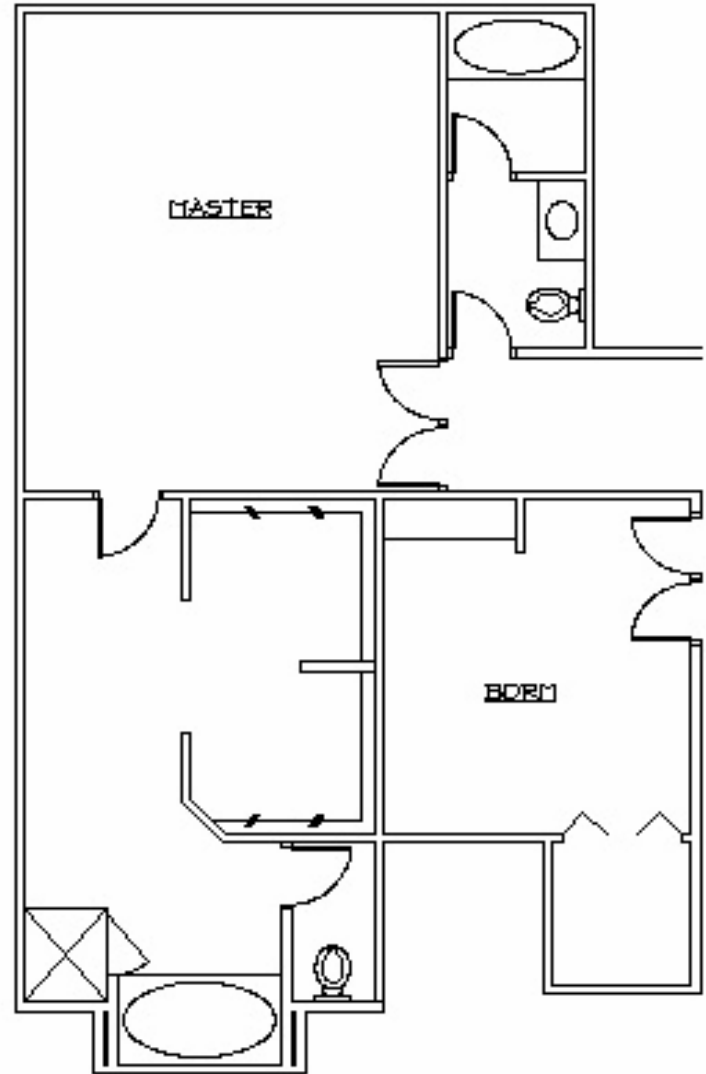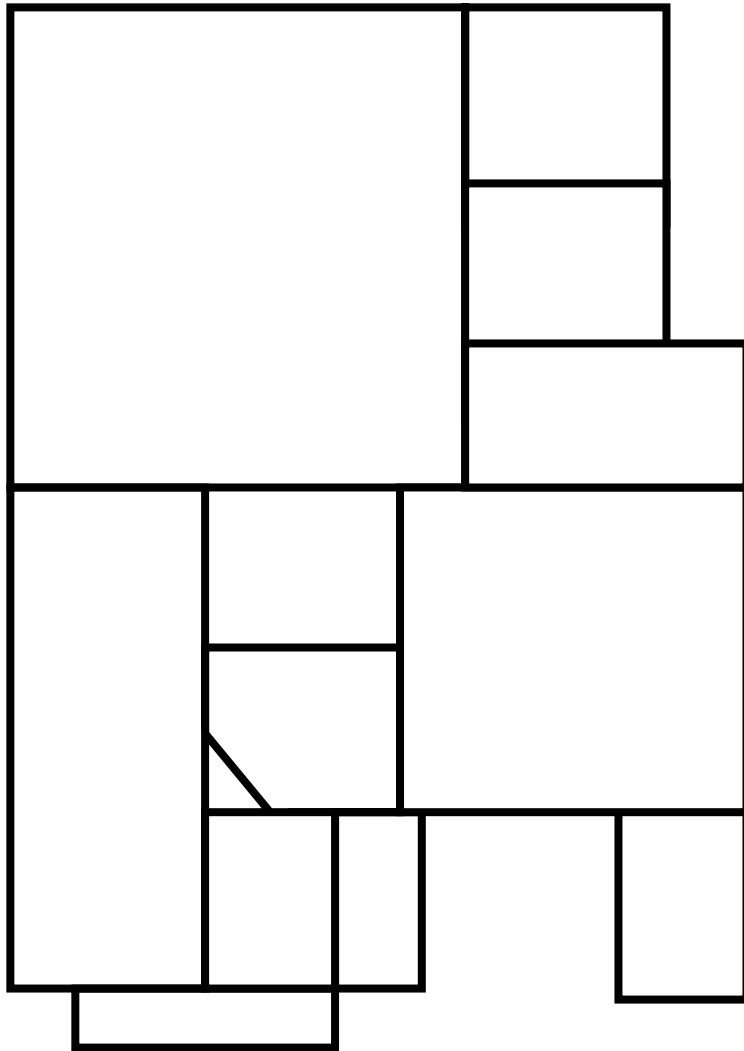
Floor Plan 1 – 12 Convex Spaces
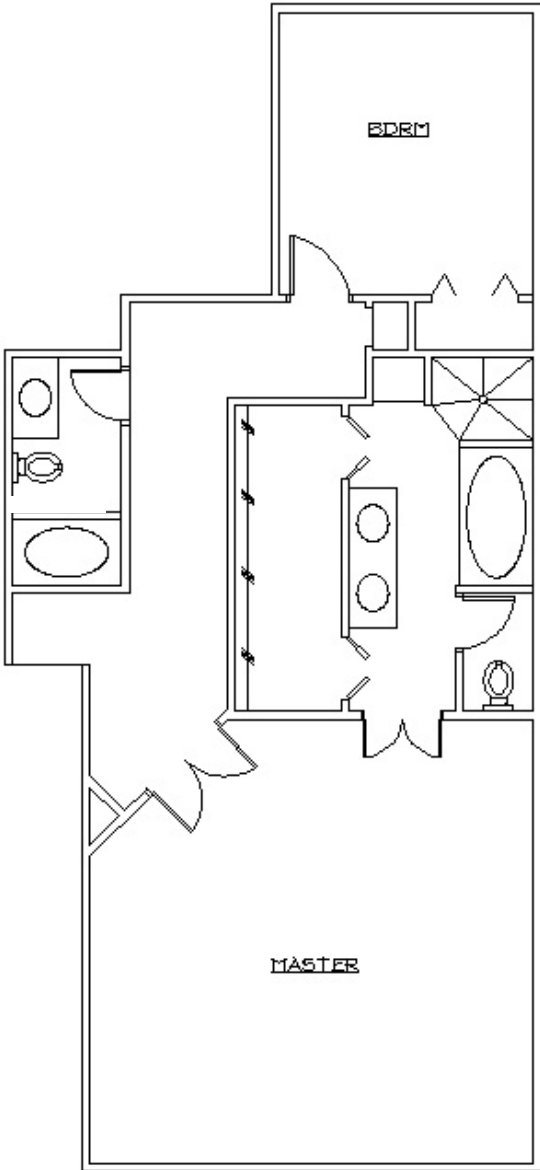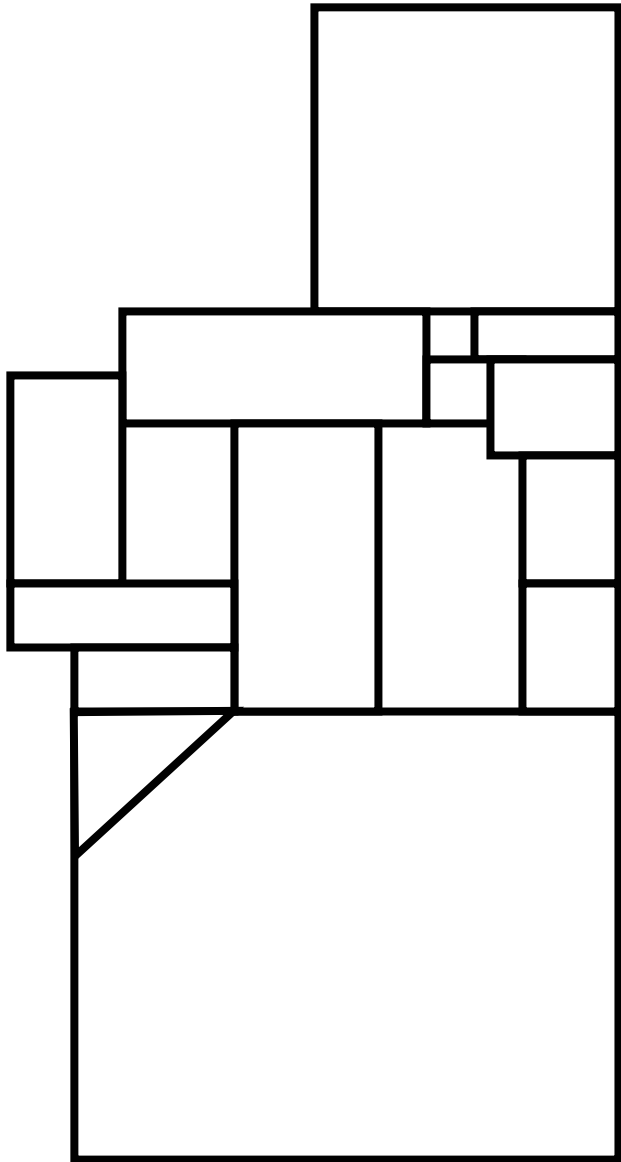
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BDRM

MASTER
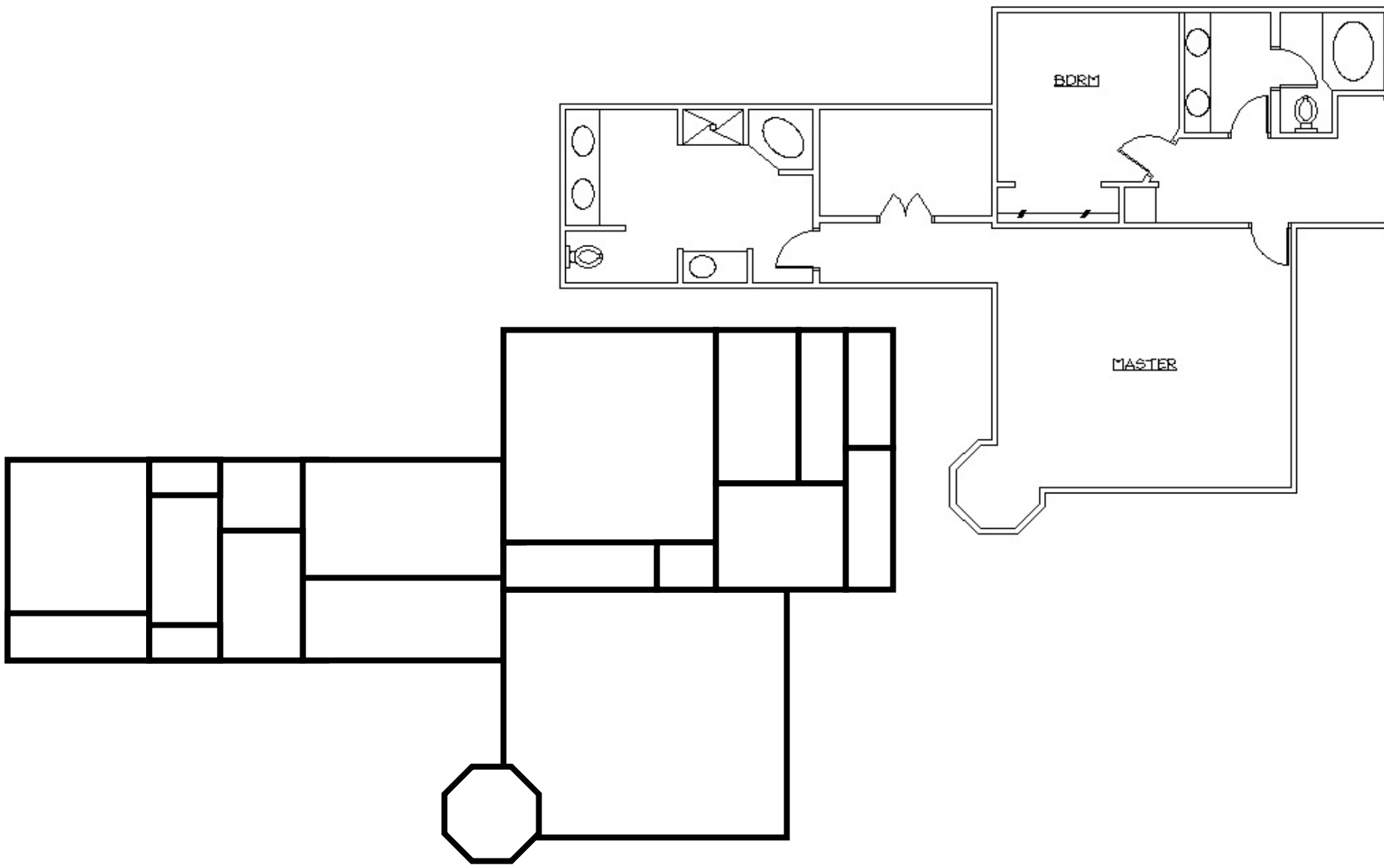
Floor Plan 3 – 19 Convex Spaces

MASTER

BDRM
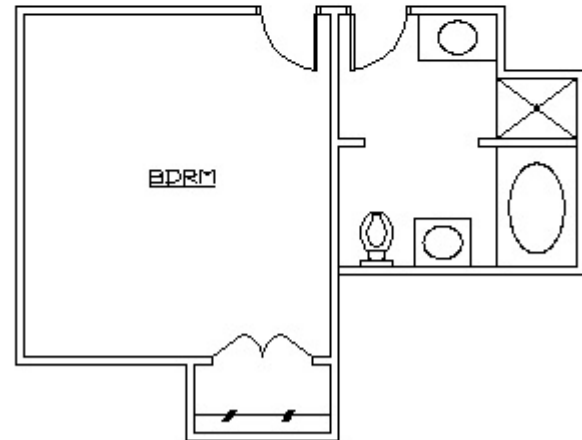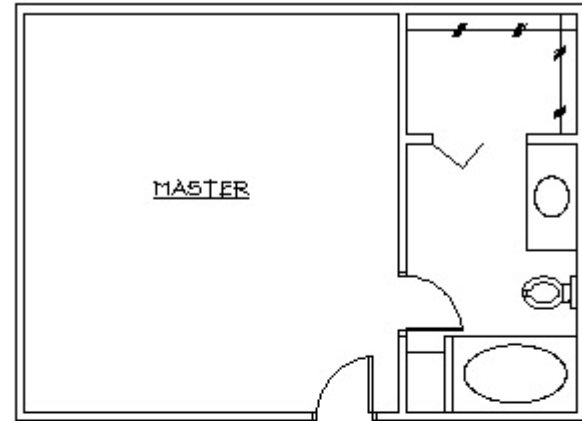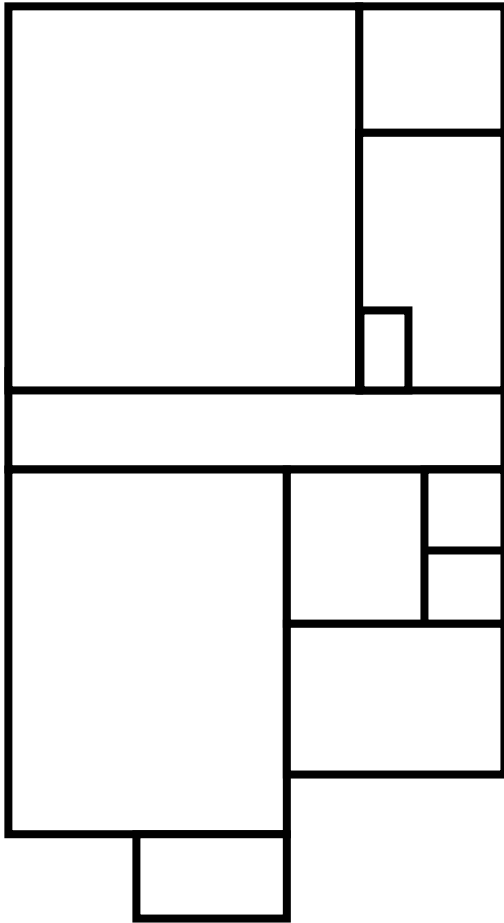
Floor Plan 4 – 11 Convex Spaces

APPENDIX B

31
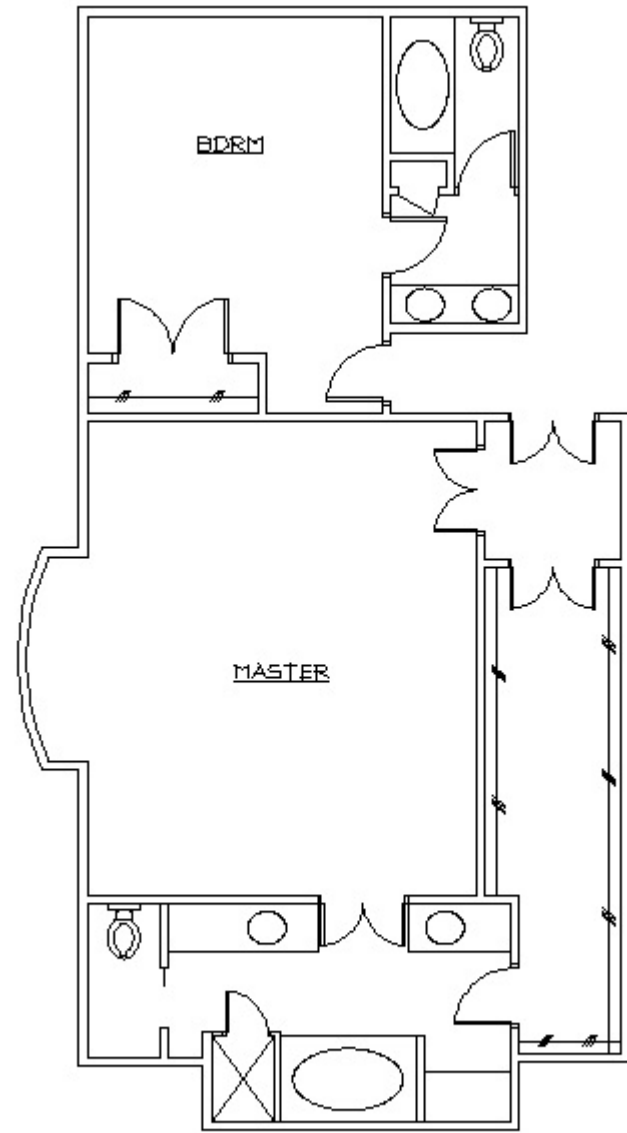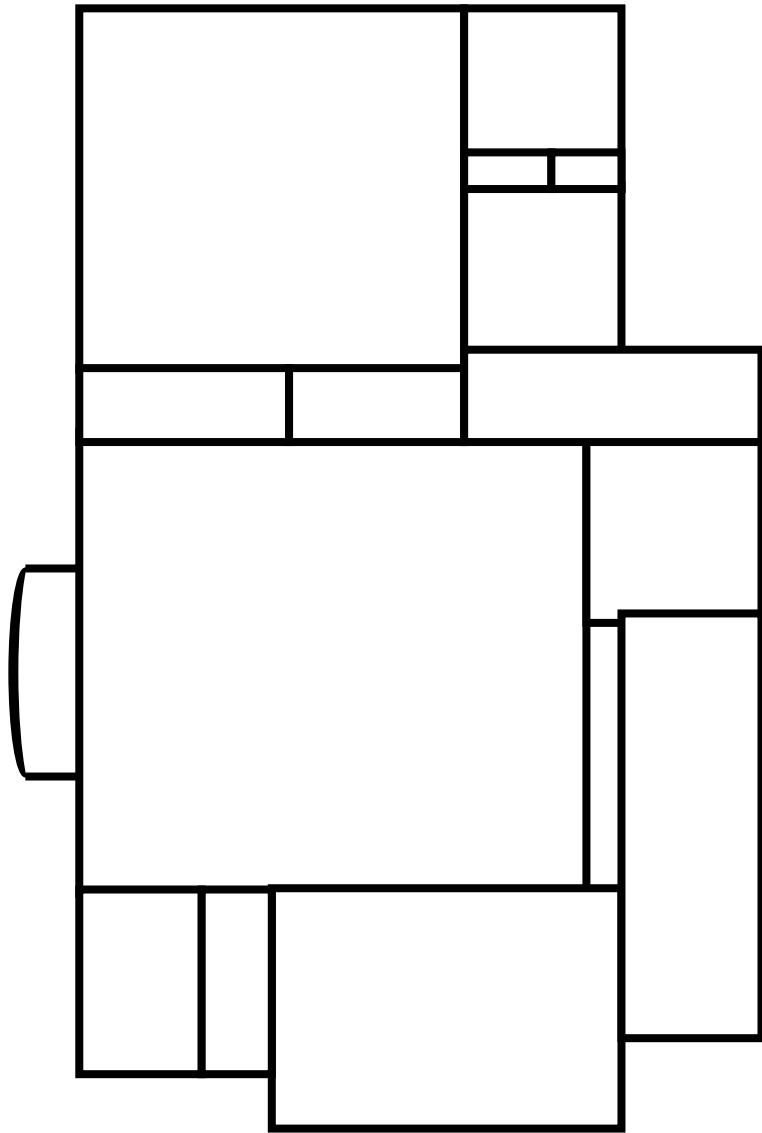
Floor Plan 5 – 16 Convex Spaces
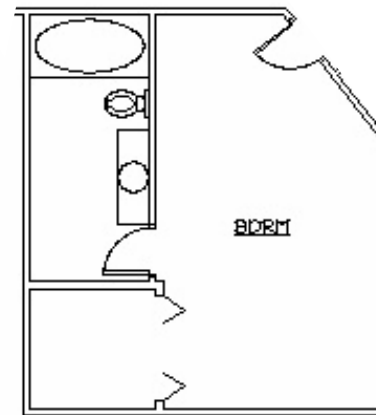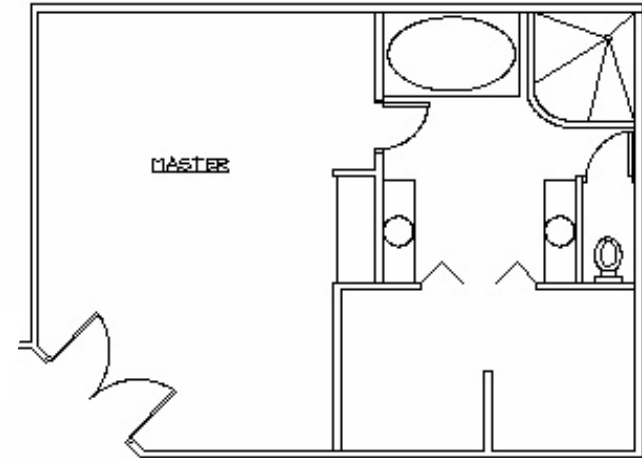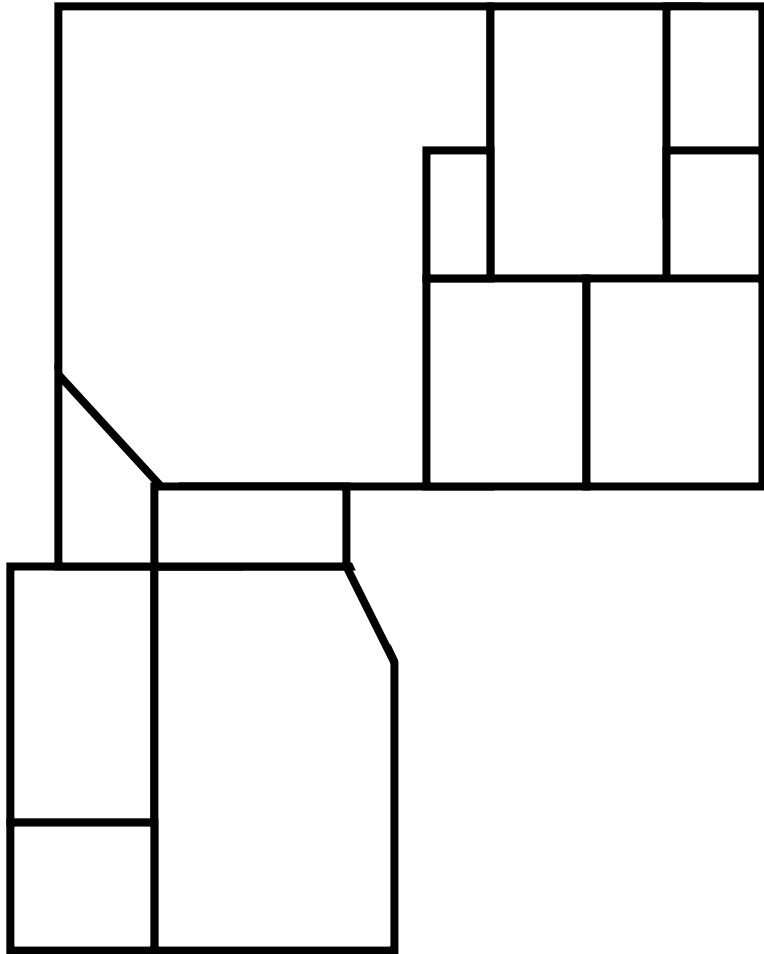
Floor Plan 6 – 12 Convex Spaces

APPENDIX C

#	ori #	user ID	Design pro	Constru ction pro	Male	College	Shy	Age	Live USA	Extraver sion/Intr aversion	Sensing /Intuiti on	Thinking /Feeling	Judging/ Perceiving
						demographics					Meyers-Briggs		
1	1	857303761	n	n	n	n	n	o35	life	I	S	F	J
2	2	858222851	n	y	y	y	y	o25	noretel	E	S	T	P
3	3	858774019	n	n	y	y	y	o50	life	I	S	T	J
4	4	858550527	n	y	n	y	n	o50	life	E	S	T	P
5	5	857223923	n	n	n	n	n	o50	life	I	S	T	J
6	6	860149306	n	n	n	y	n	o25	life	E	S	F	J
7	7	862420537	n	n	n	y	n	o35	life	I	S	F	J
8	8	865169525	n	y	y	y	n	u25	life	E	S	T	J
9	9	868210579	y	n	y	y	n	o35	life	E	N	F	P
10	10	880630995	n	n	n	y	y	o25	life	I	N	T	J
11	11	882344174	n	n	n	y	n	o25	life	E	S	F	P
12	12	882375421	n	n	n	y	n	o25	life	E	S	T	J
13	13	882387380	n	n	n	n	n	o25	life	I	N	F	P
14	14	884626212	n	n	y	n	y	o25	life	I	S	F	P
15	15	917159648	n	n	n	n	n	o50	life	E	N	T	J
16	16	918133735	n	n	n	y	n	o35	life	E	S	T	P
17	17	918271015	n	n	n	n	n	o35	life	E	N	F	P
18	18	919246163	n	n	n	y	n	o50	life	E	S	F	J
19	19	919621429	y	n	y	y	y	o35	life	I	S	T	J
20	20	919410317	n	n	n	y	y	o50	noretel	I	S	F	J
21	21	922129420	n	n	n	y	n	o25	life	I	S	T	P
22	22	921520001	n	n	n	y	y	o35	life	E	N	F	P
23	23	921887647	n	n	y	y	n	o50	life	I	S	F	J
24	24	922739888	y	n	y	y	n	o35	life	E	S	T	J
25	25	923080611	n	n	n	n	n	o35	life	E	N	F	P
26	26	923871008	n	n	n	y	n	o25	life	I	S	T	J
27	27	925529154	n	n	y	y	n	o35	life	E	S	T	J
28	28	925509881	n	n	n	n	n	o35	life	I	S	F	J
29	29	925817062	n	n	n	n	n	o50	life	E	S	F	J
30	30	926157276	n	y	y	y	y	o25	life	I	N	T	P
31	31	925849942	n	n	n	y	n	o35	life	E	S	F	P
32	32	926874842	n	n	n	y	n	o50	noretel	E	N	T	P
33	33	927055328	n	n	y	n	n	o25	life	E	S	T	J
34	34	928436070	n	n	n	y	n	o50	life	I	N	F	J
35	35	928792308	n	n	n	y	y	o25	life	I	S	T	J
36	36	931131965	n	n	y	y	n	o35	life	E	N	T	J
37	37	931930540	n	n	n	n	n	u25	five	I	N	T	J
38	38	933084660	n	n	n	y	n	o35	life	E	N	F	P
39	39	933394676	n	n	n	n	y	o35	life	I	S	F	P
40	40	934354815	y	n	y	n	n	o35	life	I	N	T	P
41	41	934768386	n	n	n	y	y	o25	noretel	I	S	F	J
42	42	936803072	n	n	y	y	n	o35	life	E	S	T	P
43	43	937301749	y	n	y	y	y	o50	life	I	N	F	P
44	44	940600989	n	n	n	n	n	o35	life	E	N	T	J
45	45	940760126	n	n	n	y	n	o25	life	I	S	T	J
46	46	940736510	n	y	y	y	n	o35	life	E	S	F	P
47	47	941968857	n	y	y	y	n	o50	life	I	N	F	J
48	48	945271073	n	n	y	y	n	o50	life	I	S	T	P
49	49	945712993	n	n	n	y	y	o35	life	I	N	F	J
50	50	948096046	n	n	y	n	n	o35	life	I	N	F	P
51	51	949189471	n	n	y	y	n	o50	life	I	S	T	J
52	52	950535764	n	n	n	n	n	u25	life	E	S	F	P
53	53	951344177	n	n	n	y	y	o35	life	I	S	F	P

SURVEY DATA

#	ori #	F1	F2	F3	F4	F5	F6	I1	I2	I3	I4	I5	I6	P1	P2	P3	P4	P5	P6
1	1	4	5	4	3	4	5	1	1	1	3	3	3	4	1	2	4	1	2
2	2	2	5	4	1	1	5	5	4	4	4	4	4	4	1	4	4	4	2
3	3	2	4	1	5	1	1	3	3	4	1	3	1	4	1	4	4	5	4
4	4	5	5	2	1	5	5	4	1	1	1	1	1	4	2	1	2	4	1
5	5	1	1	4	1	4	2	2	1	1	1	2	2	1	4	4	1	1	5
6	6	4	4	2	1	2	5	3	1	3	1	3	3	1	3	3	3	1	5
7	7	5	4	2	2	1	5	2	1	1	1	1	2	4	4	5	3	2	4
8	8	5	5	1	3	2	2	4	2	1	3	2	2	3	2	4	5	2	5
9	9	2	3	1	3	1	2	4	2	2	2	2	1	1	2	2	4	4	4
10	10	5	5	2	4	5	4	5	1	1	5	4	3	4	1	5	4	5	5
11	11	1	5	1	2	4	3	3	1	1	1	3	1	2	4	2	4	1	4
12	12	5	5	1	1	2	2	1	3	3	1	3	3	1	1	1	2	2	3
13	13	5	5	2	2	5	5	4	3	1	1	4	2	2	2	2	2	4	4
14	14	2	2	1	3	2	3	5	1	1	1	2	1	1	1	4	3	4	2
15	15	2	4	2	4	1	1	4	1	1	3	4	4	2	5	5	2	4	4
16	16	2	5	2	3	2	3	2	1	1	1	1	1	4	1	4	2	2	4
17	17	2	3	5	1	3	4	4	3	1	1	3	3	1	4	1	2	5	4
18	18	2	4	3	1	4	3	1	1	4	3	1	1	2	1	4	1	4	2
19	19	1	5	3	2	3	5	4	2	2	2	1	3	4	4	4	4	5	4
20	20	2	4	4	2	2	4	4	1	3	2	1	1	4	4	2	2	2	4
21	21	4	4	3	1	1	4	1	2	2	1	2	3	3	4	1	1	4	2
22	22	5	4	2	1	4	2	1	2	4	4	2	2	3	1	4	4	3	2
23	23	4	4	1	1	4	4	2	2	2	2	2	2	1	3	3	1	3	4
24	24	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1
25	25	2	5	4	2	2	4	2	2	3	3	3	3	2	2	2	2	2	3
26	26	1	5	1	1	2	2	1	1	1	1	1	1	2	1	4	1	1	4
27	27	2	2	1	2	1	1	3	4	1	1	3	3	1	2	2	1	1	2
28	28	2	3	4	1	5	5	3	1	1	1	3	3	3	2	4	3	2	3
29	29	3	5	1	1	2	5	1	1	3	3	1	1	1	4	3	3	4	4
30	30	5	5	4	5	4	4	2	3	1	5	4	4	4	5	4	3	4	2
31	31	3	3	2	1	2	5	2	4	4	2	4	2	4	3	1	1	2	4
32	32	2	2	1	2	1	1	4	5	1	1	2	4	2	2	2	3	3	1
33	33	4	4	4	4	4	5	3	3	3	3	3	3	1	1	4	3	2	5
34	34	2	2	2	1	3	2	3	1	2	1	1	1	4	4	2	4	5	4
35	35	4	5	2	1	4	2	1	1	4	1	1	1	2	2	2	3	3	4
36	36	5	4	5	4	5	5	2	2	2	2	2	2	3	1	2	1	4	1
37	37	1	1	4	1	1	1	1	4	1	1	3	4	1	1	4	2	1	4
38	38	4	2	4	2	1	2	3	1	1	1	3	3	1	1	2	2	1	3
39	39	4	5	4	1	2	2	4	3	1	4	2	3	2	1	3	2	5	2
40	40	4	4	4	4	4	4	1	1	1	1	1	1	2	4	5	1	5	2
41	41	4	2	1	4	4	2	3	5	1	1	1	1	4	2	5	4	4	2
42	42	4	5	2	5	2	2	2	2	1	4	2	3	1	1	3	2	3	2
43	43	1	3	3	2	1	2	1	3	3	1	1	1	2	2	1	2	3	1
44	44	3	5	4	3	2	2	2	3	2	1	4	5	1	4	4	2	4	2
45	45	2	2	2	2	2	2	2	1	3	3	2	3	2	2	1	1	1	4
46	46	2	3	2	3	2	2	3	3	1	1	2	3	2	2	2	2	2	2
47	47	3	5	3	1	2	2	1	1	1	1	1	1	3	3	5	2	1	5
48	48	4	5	2	4	4	4	2	2	2	2	1	2	4	4	4	2	4	2
49	49	4	4	1	3	2	5	3	1	1	1	1	1	2	1	4	4	4	1
50	50	5	5	4	1	5	4	1	3	1	1	3	3	4	1	1	4	4	2
51	51	2	3	5	2	3	3	3	3	3	1	3	3	2	2	3	2	2	2
52	52	1	5	3	3	3	4	2	4	1	1	4	5	4	5	4	4	2	5
53	53	2	5	2	1	2	4	4	3	1	3	4	4	2	3	3	3	4	3

#	ori #	user ID	demographics							Meyers-Briggs			
			Design pro	Constru ction pro	Male	College	Shy	Age	Live USA	Extraver sion/Intr aversion	Sensing /Intuiti on	Thinking /Feeling	Judging/ Perceiving
54	54	955990786	n	n	y	y	n	o50	life	E	N	F	J
55	55	958456673	n	n	n	y	n	o50	noretel	E	N	F	J
56	56	960394854	n	n	n	y	y	o35	life	I	S	T	J
57	57	960863806	n	y	y	n	y	o25	life	I	N	T	J
58	58	962030194	n	n	n	y	n	o50	life	I	S	F	P
59	59	969255615	n	n	y	n	y	u25	life	I	N	F	J
60	60	238182	n	n	n	y	n	o25	noretel	E	N	T	P
61	61	4716761	n	n	y	y	y	o35	noretel	I	S	T	J
62	62	15441491	n	n	y	y	n	o35	life	I	N	F	P
63	63	17271447	n	n	n	y	y	o50	life	I	N	F	P
64	64	19353011	y	y	y	y	n	o35	life	E	N	F	J
65	65	20534008	n	n	n	n	n	o50	life	E	S	F	J
66	66	23057192	n	y	n	y	n	o50	life	I	N	T	P
67	67	24537482	n	n	n	n	n	o35	ten	E	N	T	P
68	68	24451200	n	n	n	n	n	o50	life	I	N	F	P
69	69	26740145	n	n	n	y	y	o50	life	I	S	F	J
70	70	28832936	n	n	n	y	n	o50	life	I	S	T	J
71	71	30549196	n	n	y	y	n	o50	life	E	S	T	J
72	72	31220098	n	n	n	n	y	o25	life	I	S	F	J
73	73	35789095	n	n	n	y	n	o25	life	E	S	F	J
74	74	40762316	n	n	n	n	n	o25	ten	E	N	F	P
75	75	43091909	n	n	n	y	n	o35	life	I	S	F	J
76	76	43936412	n	n	y	y	y	o35	life	I	S	T	P
77	77	46084078	n	n	n	n	n	o35	life	I	S	F	P
78	78	48346532	n	n	n	y	y	o35	life	E	N	F	J
79	79	88103140	n	n	n	n	y	o35	noretel	I	N	F	P
80	80	91179036	n	n	y	n	n	o25	life	E	S	T	J
81	81	104030463	n	n	n	y	n	o35	noretel	E	S	F	J
82	82	106026154	n	n	y	y	n	o50	life	E	N	F	P
83	83	108365562	n	n	y	y	n	o50	life	I	N	T	P
84	84	108859425	n	n	y	n	n	o50	life	I	N	T	P
85	85	109495227	y	n	y	y	y	o35	noretel	E	S	T	J
86	86	110666462	n	n	y	y	y	o50	never	I	N	T	J
87	87	111375717	n	n	y	y	n	o50	life	I	S	F	P
88	88	112402057	n	n	y	y	n	o50	life	I	S	T	J
89	89	108025776	n	n	y	y	y	o35	life	I	N	F	P
90	90	112968783	n	n	y	y	n	o50	life	E	N	T	J
91	91	112695431	n	n	y	y	n	o35	life	I	S	T	J
92	92	113076556	n	n	n	n	n	o35	life	E	S	T	J
93	93	114723443	n	n	n	y	n	o35	noretel	E	S	T	J
94	94	115235343	n	n	y	y	n	o50	life	I	S	T	J
95	95	115551055	n	n	n	y	y	o35	life	I	S	F	J
96	96	117166816	n	n	y	y	n	o50	life	E	N	T	P
97	97	118881548	n	n	y	y	n	o35	life	I	S	T	J
98	98	119360326	n	n	n	y	n	o25	noretel	E	N	T	J
99	99	122928575	n	n	y	n	n			I	N	T	P
100	100	122776537	n	n	n	y	n	o35	life	I	S	T	P
101	101	123187344	n	n	n	y	n	o35	life	E	N	F	J
102	102	122951550	n	n	n	y	n	o25	life	I	S	T	P
103	103	125305465	n	n	n	y	n	o35	life	E	S	T	J
104	104	126882459	n	n	y	y	n	o50	life	I	S	T	P
105	105	126817951	n	n	y	n	n	o50	life	I	S	T	J
106	106	127215208	n	n	n	n	n	u25	life	E	S	T	P

#	ori #	F1	F2	F3	F4	F5	F6	I1	I2	I3	I4	I5	I6	P1	P2	P3	P4	P5	P6
54	54	2	2	5	1	4	4	4	1	3	1	1	1	2	5	3	2	2	5
55	55	4	5	2	1	5	2	4	3	3	1	4	1	2	4	2	1	4	2
56	56	4	4	1	4	4	5	3	1	1	1	1	1	1	2	2	1	1	2
57	57	2	4	2	2	2	3	4	3	1	2	4	2	2	4	2	2	2	2
58	58	2	2	3	2	4	1	1	5	1	1	1	1	1	2	1	1	2	2
59	59	2	5	2	3	1	2	3	1	1	1	3	1	4	1	3	2	1	2
60	60	1	1	2	2	2	2	3	1	1	1	3	1	2	1	3	2	1	1
61	61	2	2	1	1	2	2	5	1	1	1	3	3	4	4	2	3	2	3
62	62	5	3	2	3	4	2	2	2	2	2	2	2	4	4	3	3	5	2
63	63	1	4	4	4	2	5	4	3	1	4	4	4	4	2	4	2	1	2
64	64	2	3	2	4	1	2	5	1	4	1	1	1	4	4	4	3	4	4
65	65	2	3	3	2	2	3	2	1	1	1	2	1	1	1	4	1	1	2
66	66	5	5	5	5	3	4	3	3	1	3	3	3	3	3	4	3	3	1
67	67	1	5	5	1	4	5	1	1	4	1	1	1	4	3	2	1	4	5
68	68	5	4	1	1	1	2	4	1	1	1	1	1	2	5	2	1	4	1
69	69	5	5	2	1	1	4	3	1	3	2	4	3	1	5	1	1	3	5
70	70	2	4	4	1	5	4	3	1	3	1	3	1	4	1	1	2	3	2
71	71	1	5	3	1	5	4	3	3	1	1	3	3	2	2	1	2	3	3
72	72	1	3	2	1	3	5	3	3	3	1	2	1	3	4	3	3	4	3
73	73	1	2	2	1	2	2	3	1	1	3	3	3	2	1	4	3	1	4
74	74	4	4	3	2	4	5	4	1	1	1	3	3	3	4	1	3	2	2
75	75	5	3	1	5	3	5	3	3	1	1	3	3	2	2	2	4	2	4
76	76	3	3	3	3	2	5	4	4	1	1	4	4	2	1	4	2	5	2
77	77	4	4	4	1	5	5	1	1	1	1	3	3	1	3	1	1	1	1
78	78	4	3	1	1	3	3	4	1	1	1	3	1	2	5	1	3	2	1
79	79	3	3	1	1	5	3	4	2	1	1	4	1	3	1	3	1	2	2
80	80	3	3	4	4	3	5	2	2	2	2	2	2	4	3	4	3	4	4
81	81	4	5	5	2	4	2	1	1	1	1	1	1	1	5	1	2	2	1
82	82	4	5	1	5	2	4	2	2	1	2	3	3	3	5	4	4	5	2
83	83	2	5	2	5	2	3	3	1	1	1	3	1	1	1	4	1	1	1
84	84	2	3	1	4	3	1	4	1	2	3	3	3	2	3	4	1	5	2
85	85	3	3	3	4	2	4	1	1	4	2	1	1	4	4	4	4	4	4
86	86	3	4	1	3	4	1	3	3	3	1	1	3	1	4	3	2	1	1
87	87	2	3	1	1	2	3	3	4	1	1	3	2	2	1	2	1	1	2
88	88	2	4	1	3	2	1	5	2	2	1	2	2	2	2	4	1	2	2
89	89	5	5	5	4	3	5	4	4	1	1	4	4	3	3	4	3	4	3
90	90	1	1	1	1	2	2	3	1	1	1	3	1	3	1	2	2	1	1
91	91	2	3	3	3	2	5	5	5	1	1	4	5	3	1	3	2	5	3
92	92	2	2	4	5	2	3	1	3	1	1	3	1	1	2	2	2	3	4
93	93	2	2	3	1	1	4	3	1	1	2	2	2	2	3	4	1	2	4
94	94	2	3	5	5	5	5	3	1	1	1	4	2	4	3	3	1	4	4
95	95	4	5	1	5	2	2	1	4	1	1	1	3	1	2	4	4	2	4
96	96	2	3	3	2	3	3	4	3	2	2	2	2	2	2	2	1	1	4
97	97	5	5	3	4	5	4	1	2	3	3	2	2	1	1	2	2	4	1
98	98	2	5	4	2	4	4	3	1	1	1	3	3	4	1	4	2	4	4
99	99	3	3	1	3	2	2	2	4	2	2	4	3	1	3	1	1	3	4
100	100	1	4	2	4	2	3	1	1	1	1	2	1	2	1	5	1	1	1
101	101	1	4	4	1	5	5	4	4	1	1	4	4	2	2	4	4	2	4
102	102	1	5	4	3	4	5	4	2	1	1	3	2	3	4	1	4	2	2
103	103	4	4	1	4	2	5	3	3	1	1	3	1	2	3	3	1	3	2
104	104	5	5	5	5	5	5	4	2	4	1	1	2	4	1	2	4	5	4
105	105	1	2	1	1	1	1	1	1	1	1	2	2	1	1	1	2	4	4
106	106	5	5	2	4	2	2	2	4	1	1	4	4	2	2	4	3	2	4

#	ori #	user ID	demographics							Meyers-Briggs			
			Design pro	Construction pro	Male	College	Shy	Age	Live USA	Extraversion/Intraversion	Sensing/Intuition	Thinking/Feeling	Judging/Perceiving
107	107	129111162	n	n	n	y	y	o35	life	I	N	T	P
108	108	130956517	n	n	y	y	n	o50	life	I	S	F	J
109	109	131065676	n	n	y	y	n	o50	life	I	S	T	J
110	110	131282470	n	n	n	n	n	o50	life	E	S	F	J
111	111	131605722	n	n	y	y	n	o50	noreten	I	S	F	J
112	112	131972405	n	n	n	y	n	o35	life	E	S	F	J
113	113	132637962	n	n	y	y	y	o50	life	I	N	F	P
114	114	133702594	n	n	y	n	y	u25	life	I	N	F	P
115	115	133886789	n	n	n	y	n	o35	life	E	N	T	J
116	116	135301842	y	y	n	n	n	o35	life	E	N	T	P
117	117	135814424	n	n	n	y	n	o35	life	I	S	T	J
118	118	136338290	n	n	n	y	n	o50	life	I	S	F	P
119	119	137469735	n	n	n	n	y	o50	life	I	S	T	J
120	120	137501553	n	n	n	y	y	o50	life	I	S	F	J
121	121	140176841	n	n	y	n	n	o50	life	I	S	F	J
122	122	142616786	n	n	n	y	y	u25	life	I	S	F	P
123	123	143670495	n	n	n	y	n	o50	life	E	S	F	P
124	124	149861970	n	n	y	y	y	o50	life	I	N	F	P
125	125	163165695	n	n	y	y	y	o50	life	I	S	T	J
126	126	163666099	y	y	y	y	n	o50	life	E	S	T	J
127	127	172557564	n	n	y	n	y	o50	life	I	S	T	J
128	128	176310305	y	y	y	n	n	o35	life	I	S	T	P
129	129	177355366	n	n	y	y	y	o50	life	I	N	T	J
130	130	178668498	n	n	n	y	y	o50	life	I	S	F	J
131	131	179261444	n	n	n	y	y	o35	life	I	S	T	J
132	132	179816678	n	n	n	n	n	o50	life	I	S	F	J
133	133	183373100	n	n	n	y	n	o50	life	E	S	T	P
134	134	185266503	n	n	n	n	n	o50	life	I	S	T	J
135	135	185724047	n	n	y	y	n	o25	life	I	S	T	P
136	136	185855409	n	n	y	y	y	o35	life	I	S	T	J
137	137	187741182	n	y	y	y	y	o35	life	I	N	T	P
138	138	188174597	n	n	n	n	y	o25	life	I	S	T	P
139	139	188425567	n	y	n	n	n	o35	life	I	S	F	J
140	140	190017130	n	n	y	y	n	o35	life	I	S	F	P
141	141	190417078	n	n	n	y	y	o50	life	I	S	T	J
142	142	193671586	n	n	n	y	n	o50	life	E	S	T	J
143	143	195917529	n	n	n	n	y	u25	life	I	S	T	J
144	144	197335764	n	n	n	n	n	o35	life	E	N	F	P
145	145	197876728	n	n	n	y	n	o35	life	E	N	F	P
146	146	198814056	n	n	n	y	n	o50	life	I	S	T	J
147	147	199039381	n	n	n	y	n	o35	life	I	S	T	J
148	148	198555620	n	n	n	n	n	o50	life	I	S	T	J
149	149	204012314	n	n	n	n	n	o35	life	E	S	T	J
150	150	207277469	n	n	y	y	n	o50	life	I	S	T	P
151	151	207434681	n	n	n	n	n	o50	life	E	S	T	J
152	152	210975170	n	y	n	y	n	o50	life	I	S	F	J
153	153	211557634	y	n	n	y	n	o35	life	E	N	T	P
154	154	212982152	n	y	n	y	y	o50	life	I	S	F	J
155	155	214156909	n	y	n	n	n	o50	life	I	S	F	J
156	156	215645477	n	n	n	n	n	o50	life	E	S	T	J
157	157	215591381	n	y	n	n	n	o35	life	E	S	F	P
158	158	214058351	n	y	n	n	n	o50	life	E	S	F	P
159	159	217818708	n	n	y	y	n	o35	life	E	S	F	J

#	ori #	F1	F2	F3	F4	F5	F6	I1	I2	I3	I4	I5	I6	P1	P2	P3	P4	P5	P6
								Survey											
107	107	1	2	5	1	1	5	1	1	1	1	1	1	2	2	4	2	4	3
108	108	2	2	4	1	2	4	1	1	1	1	1	1	1	1	1	1	4	1
109	109	2	3	2	2	2	2	1	1	1	1	2	1	2	2	2	1	1	1
110	110	2	5	4	2	4	5	4	3	1	3	3	3	4	3	4	3	5	4
111	111	5	4	1	1	4	5	1	1	2	1	1	1	4	2	4	5	4	4
112	112	1	2	4	1	2	4	2	3	3	2	1	1	1	1	4	1	4	2
113	113	5	5	2	5	4	2	3	3	1	1	3	1	4	1	2	3	5	1
114	114	2	3	2	2	3	5	3	2	2	1	2	2	2	2	4	2	2	4
115	115	2	3	4	2	5	5	4	1	1	1	5	5	3	4	4	4	3	3
116	116	4	5	2	5	3	1	5	1	1	4	5	3	1	4	5	3	5	4
117	117	1	2	1	1	2	5	4	1	3	3	4	4	1	1	5	2	5	2
118	118	2	4	4	2	4	4	3	1	1	1	3	3	2	2	3	1	3	2
119	119	2	3	3	2	3	3	4	2	3	3	4	4	2	1	3	2	4	1
120	120	1	5	5	1	5	5	1	3	1	1	1	1	2	2	2	2	2	3
121	121	2	3	1	3	3	5	4	4	2	3	4	4	4	4	4	4	4	4
122	122	1	4	4	1	3	5	4	4	1	1	2	3	2	3	2	3	5	3
123	123	1	2	2	1	3	3	2	1	2	1	1	1	1	1	2	2	3	2
124	124	1	5	1	1	4	2	3	2	1	3	3	3	2	1	3	2	1	2
125	125	2	3	2	3	3	2	1	3	2	1	3	3	3	1	2	3	2	3
126	126	5	5	2	5	2	2	4	3	1	1	3	3	2	1	5	2	1	5
127	127	4	3	2	2	2	3	2	3	1	1	3	2	1	2	4	3	4	4
128	128	4	3	1	2	2	5	2	2	2	2	2	3	1	2	2	2	2	3
129	129	4	3	1	1	3	5	5	1	1	1	4	4	4	2	3	3	3	3
130	130	2	4	4	2	3	5	4	2	1	1	2	2	3	2	5	3	5	3
131	131	2	5	4	2	4	4	3	1	2	1	1	1	1	1	3	1	3	2
132	132	1	4	2	1	4	5	2	2	3	2	1	2	1	3	4	2	3	2
133	133	1	5	5	1	4	5	2	1	1	1	4	4	5	5	5	1	5	5
134	134	1	2	2	1	4	5	3	2	1	1	3	2	1	1	4	1	4	2
135	135	4	5	4	3	2	5	5	5	4	4	5	5	4	4	4	5	4	4
136	136	2	3	3	2	3	5	1	1	1	1	1	1	1	2	4	2	4	2
137	137	2	5	1	2	3	2	4	1	1	1	4	1	1	4	4	3	4	1
138	138	1	5	5	4	5	5	2	5	1	3	4	3	5	2	4	2	4	5
139	139	1	5	2	1	2	5	2	3	1	1	1	2	4	1	2	2	4	1
140	140	1	2	1	3	3	2	3	4	3	2	3	3	1	1	1	2	3	2
141	141	4	4	4	2	4	4	3	1	1	1	1	1	2	1	1	2	3	1
142	142	4	5	2	5	5	5	1	3	1	1	1	1	3	2	5	2	1	2
143	143	5	4	2	2	2	5	2	3	3	1	5	5	2	1	5	4	4	5
144	144	2	5	2	5	2	1	1	1	1	1	1	1	1	2	4	4	3	1
145	145	3	5	1	3	2	2	4	4	1	3	4	4	2	1	2	2	2	2
146	146	2	2	2	1	1	4	3	1	2	1	1	1	4	4	3	3	2	5
147	147	4	4	4	4	4	3	4	3	1	1	2	3	1	4	4	3	4	4
148	148	1	4	4	2	5	4	3	1	3	1	2	1	1	2	4	2	4	1
149	149	1	5	4	1	4	5	1	1	1	1	3	3	5	1	1	1	5	1
150	150	2	4	2	3	2	1	1	2	2	1	2	1	2	2	2	2	2	3
151	151	5	5	4	5	5	5	4	1	1	1	4	4	4	1	4	1	5	2
152	152	2	2	2	3	2	3	2	2	2	3	2	2	2	2	3	2	1	2
153	153	1	3	1	2	1	2	3	1	3	1	3	1	2	2	2	2	4	1
154	154	5	5	4	4	4	4	3	3	1	2	3	3	4	4	4	3	5	3
155	155	5	3	4	1	2	4	4	1	1	1	3	4	2	1	4	2	2	2
156	156	2	3	5	2	4	5	1	1	1	1	1	1	3	3	4	2	2	1
157	157	5	4	5	2	4	5	3	1	2	3	2	1	1	4	4	4	5	4
158	158	5	5	5	1	2	5	3	2	1	1	1	3	1	2	3	2	5	3
159	159	4	4	4	4	5	5	4	3	3	3	3	3	4	3	4	3	1	2

#	ori #	user ID	demographics							Meyers-Briggs			
			Design pro	Constru ction pro	Male	College	Shy	Age	Live USA	Extraver sion/Intr aversion	Sensing /Intuiti on	Thinking /Feeling	Judging/ Perceiving
160	160	218244075	n	y	n	n	n	o50	life	I	S	F	J
161	161	218517506	n	n	n	y	n	o35	life	E	S	T	J
162	162	218092066	n	n	n	y	n	o50	life	E	N	F	P
163	163	218599851	n	n	n	n	n	o50	life	E	S	F	P
164	164	220117375	n	n	n	y	n	o35	life	I	S	T	J
165	165	222894269	n	n	y	y	n	o25	life	E	S	F	J
166	166	224026365	n	y	n	y	n	o50	life	E	S	T	J
167	167	224964203	n	y	y	y	n	o50	life	E	S	T	J
168	168	226455032	n	n	n	y	n	o50	life	I	S	F	J
169	169	228586398	n	n	n	y	y	o35	life	I	S	T	J
170	170	229745992	n	n	n	y	n	o50	life	I	S	F	J
171	171	231592413	n	n	y	y	n	o25	life	E	N	F	P
172	172	252233474	n	n	y	y	y	o35	life	I	N	T	J
173	173	252140578	n	n	n	n	n	o50	life	I	S	F	J
174	174	252393624	n	n	n	n	y	o50	life	I	S	T	P
175	175	252645107	n	n	n	n	y	o50	life	I	N	F	P
176	176	253245612	n	n	n	n	n	o50	life	E	N	F	P
177	177	254302887	n	n	n	n	n	o35	life	I	N	F	P
178	178	254698575	n	n	y	y	n	o50	life	E	S	T	J
179	179	254082128	n	n	n	y	n	o25	life	E	S	T	J
180	180	255453137	y	n	n	y	n	o50	life	E	N	F	P
181	181	255520475	n	n	n	n	n	o35	life	I	S	T	P
182	182	255752338	n	n	y	y	n	o35	life	I	S	T	J
183	183	255853718	n	n	n	n	n	u25	life	E	S	T	J
184	184	255860664	n	n	y	y	n	o50	life	I	S	F	J
185	185	256522567	n	n	y	y	n	o50	life	I	S	F	J
186	186	257042779	n	n	n	n	n	o25	life	E	S	F	J
187	187	257124091	n	n	n	y	n	o35	life	E	N	F	P
188	188	257359825	n	n	n	n	n	o25	life	E	S	F	P
189	189	257783080	n	n	n	n	y	o50	life	E	S	T	J
190	190	258062448	n	n	n	n	n	o50	life	E	N	F	P
191	191	257898663	y	n	y	y	n	o35	life	I	S	F	J
192	192	258601671	n	n	n	n	y	o50	life	I	S	T	J
193	193	258651478	n	y	y	y	n	o50	life	E	S	T	J
194	194	258948723	n	y	n	y	n	o25	life	I	S	F	J
195	195	259304323	n	n	y	y	y	o35	life	I	S	T	J
196	196	258741979	n	n	n	n	y	o50	life	I	S	T	J
197	197	259730284	n	n	n	y	y	o35	life	I	N	F	P
198	198	258251734	n	y	n	n	n	o35	life	I	S	F	J
199	199	258570410	n	n	y	y	n	o35	life	I	S	T	J
200	200	260584790	n	y	y	n	y	o50	life	I	S	T	J
201	201	260989297	n	y	n	n	n	o35	life	E	S	F	J
202	202	261128119	y	n	y	y	n	o25	life	I	N	F	J
203	203	261408889	n	y	n	n	n	o25	life	E	S	F	P
204	204	261124990	n	n	y	y	y	o35	life	I	S	F	P
205	205	261627881	n	n	n	y	y	o35	life	I	S	F	J
206	206	261543341	n	n	n	y	y	o25	life	I	S	T	J
207	207	261605236	n	y	n	n	n	o25	life	E	N	F	P
208	208	262796561	n	n	n	n	n	o35	life	I	N	F	P
209	209	262978585	n	n	n	n	n	o35	life	E	S	F	P
210	210	262492279	n	y	n	y	n	o35	life	E	S	T	P
211	211	263071090	n	n	y	y	n	o50	life	E	S	F	J
212	212	263164006	n	y	n	y	n	u25	life	E	S	T	J

#	ori #	F1	F2	F3	F4	F5	F6	I1	I2	I3	I4	I5	I6	P1	P2	P3	P4	P5	P6
								Survey											
160	160	2	4	5	1	3	5	2	3	1	1	3	1	1	2	4	1	4	2
161	161	1	2	2	2	4	4	1	1	1	1	3	3	2	2	1	3	1	1
162	162	1	5	3	4	3	3	2	1	3	1	2	3	2	1	2	2	1	4
163	163	2	5	5	2	5	5	5	5	1	3	5	5	3	2	4	5	4	3
164	164	2	2	1	1	1	5	3	1	1	1	3	3	2	1	2	2	3	1
165	165	1	5	2	2	1	4	2	2	3	1	2	2	1	3	4	5	2	3
166	166	2	2	3	1	3	5	3	4	1	1	2	1	2	1	4	2	5	1
167	167	2	2	2	4	3	5	3	1	1	1	3	1	1	1	1	2	2	3
168	168	3	4	5	3	5	5	1	2	1	1	1	1	4	5	1	4	4	4
169	169	5	4	2	1	5	5	4	3	1	1	4	4	2	4	3	3	2	2
170	170	2	5	2	3	5	1	4	1	1	2	3	3	5	2	4	1	4	4
171	171	1	5	4	2	2	1	4	2	3	2	2	2	1	3	4	3	4	3
172	172	1	4	4	1	2	4	1	1	1	1	1	1	2	2	4	4	1	3
173	173	5	2	1	1	5	5	3	1	1	1	5	1	2	2	1	2	4	1
174	174	1	4	4	1	2	5	2	2	2	2	2	3	2	2	2	3	4	2
175	175	1	1	4	1	5	3	3	3	1	1	4	1	2	5	5	2	4	1
176	176	2	5	2	1	5	5	3	1	1	3	5	4	2	1	4	1	4	2
177	177	1	2	3	1	4	5	1	3	3	1	1	3	1	1	3	2	4	4
178	178	2	5	1	3	2	2	5	1	1	1	3	3	5	1	4	2	2	4
179	179	1	4	4	1	2	5	3	2	1	1	3	3	4	3	4	3	4	4
180	180	4	4	2	2	2	2	3	3	3	3	3	1	3	3	3	4	3	4
181	181	5	5	2	1	4	5	4	1	1	2	2	3	3	2	4	3	4	4
182	182	2	4	4	2	1	5	4	1	3	3	3	1	2	2	4	2	2	4
183	183	2	5	5	5	5	5	3	1	1	3	3	1	3	4	1	2	1	2
184	184	2	5	5	1	5	5	1	1	1	1	3	3	1	2	4	2	4	2
185	185	1	1	1	1	1	3	1	1	1	1	1	1	2	2	2	2	2	2
186	186	1	4	3	1	2	5	4	3	1	1	1	1	1	2	1	4	4	1
187	187	1	1	2	2	5	5	3	3	1	3	3	1	5	2	2	2	3	5
188	188	2	3	2	1	2	5	3	3	1	1	3	3	2	2	4	2	2	2
189	189	2	2	3	1	1	2	1	1	1	1	1	1	1	2	1	1	2	2
190	190	2	5	1	1	3	5	1	1	1	1	5	4	1	4	4	1	4	2
191	191	2	5	2	1	1	1	1	1	1	1	3	1	1	1	4	1	4	1
192	192	2	5	4	1	5	2	3	2	2	2	2	2	2	1	4	3	2	4
193	193	5	5	2	2	2	4	2	2	2	1	2	2	3	1	4	1	2	1
194	194	3	2	3	1	3	3	2	2	1	1	2	3	3	3	3	3	2	2
195	195	2	2	2	1	2	1	3	2	1	1	3	2	1	2	1	1	2	1
196	196	1	5	2	2	2	2	3	3	1	1	2	1	1	2	5	1	1	2
197	197	1	4	1	2	4	5	5	1	1	1	4	4	1	1	5	3	1	4
198	198	1	2	1	1	1	2	3	3	1	2	3	3	4	4	1	2	1	4
199	199	2	5	4	2	1	3	3	3	2	1	3	3	2	2	1	2	2	2
200	200	2	3	2	1	4	3	2	1	1	1	1	1	1	2	3	1	1	1
201	201	2	5	2	1	2	3	2	2	3	1	4	2	2	4	1	4	1	1
202	202	1	1	2	4	2	1	4	3	3	4	1	1	2	2	1	3	1	3
203	203	4	5	2	1	5	5	2	1	3	4	5	5	2	2	4	2	2	2
204	204	4	5	5	4	3	2	3	2	1	1	3	2	2	2	3	4	4	3
205	205	1	2	1	1	2	2	1	1	1	1	3	1	4	4	4	3	3	2
206	206	5	5	4	1	5	5	5	4	1	4	4	4	5	4	4	4	5	5
207	207	3	3	4	1	4	5	2	1	3	3	2	3	2	2	2	3	4	2
208	208	3	3	2	1	3	2	2	2	2	2	2	2	3	1	2	4	4	5
209	209	2	5	3	2	2	2	4	1	1	3	4	4	2	4	4	4	4	2
210	210	2	2	2	1	3	5	3	3	1	1	3	1	1	3	2	2	1	2
211	211	2	3	4	1	3	5	5	5	1	2	5	2	2	1	3	1	1	1
212	212	2	2	5	2	2	1	3	2	1	1	2	3	4	2	2	3	5	3

#	ori #	user ID	demographics							Meyers-Briggs			
			Design pro	Construction pro	Male	College	Shy	Age	Live USA	Extraversion/Intraversion	Sensing/Intuition	Thinking/Feeling	Judging/Perceiving
213	213	263729622	n	y	n	n	n	o35	life	I	S	F	J
214	214	263797507	n	n	n	y	n	o50	life	E	S	T	J
215	215	263687587	n	y	n	n	n	o35	life	E	S	T	J
216	216	262995499	n	y	n	y	n	o25	life	E	S	F	P
217	217	264709550	n	n	n	y	n	o35	life	E	N	F	J
218	218	264907240	n	n	n	n	n	o35	life	E	S	T	J
219	219	265463545	n	n	y	n	n	o35	life	I	S	T	J
220	220	264639782	n	y	n	y	n	o35	life	I	S	F	J
221	221	265825683	n	y	n	y	n	o35	norete	E	S	T	P
222	222	265669059	n	n	n	y	n	o35	life	E	N	F	P
223	223	266233800	n	y	n	y	n	o50	life	I	S	F	J
224	224	266458877	n	n	n	n	n	o35	life	I	S	T	J
225	225	266607810	n	n	n	n	y	o25	life	I	N	T	J
226	226	266020984	n	y	n	y	n	o50	life	E	N	F	P
227	227	266376278	n	n	y	y	n	o50	life	E	N	F	P
228	228	266263228	n	n	n	n	y	o25	life	I	S	F	J
229	229	266611899	n	n	n	y	n	o35	life	E	S	T	J
230	230	266843643	n	y	n	y	y	o35	life	I	S	T	J
231	231	265844448	n	y	n	y	y	u25	norete	I	S	T	J
232	232	267140356	n	n	n	n	y	o50	life	I	S	F	J
233	233	267271505	n	n	n	y	n	o50	life	E	N	F	P
234	234	267861815	n	n	n	y	n	o50	life	E	S	F	J
235	235	267727338	n	n	y	y	n	o50	life	I	S	T	J
236	236	268048335	n	n	n	y	y	o35	life	I	S	T	J
237	237	268649068	n	y	n	y	n	o35	life	E	S	F	J
238	238	268558002	n	y	n	y	n	o35	norete	I	N	T	P
239	239	268280856	n	y	n	y	n	o50	life	I	S	F	J
240	240	268867513	n	y	y	n	n	o35	life	E	S	F	P
241	241	269004244	n	y	n	n	n	o25	life	E	S	T	J
242	242	269010531	n	n	n	n	n	u25	life	I	N	F	J
243	243	268510327	n	n	n	y	y	o50	norete	I	N	T	J
244	244	269353094	n	y	n	y	n	o25	life	I	S	T	J
245	245	269224223	n	n	y	y	n	o50	life	I	S	F	J
246	246	269685615	y	n	n	y	n	o50	life	I	N	F	J
247	247	269725058	n	n	n	y	y	o50	life	I	S	F	J
248	248	270391955	n	y	n	y	y	o25	life	E	S	T	J
249	249	270552986	n	n	n	y	n	o25	life	E	S	T	J
250	250	270200478	n	y	n	n	n	o50	life	E	S	F	J
251	251	269970311	n	n	n	y	n	o35	life	E	S	T	J
252	252	270669132	y	y	y	y	n	o35	life	E	S	F	P
253	253	271165726	n	y	n	n	n	o50	life	I	S	F	P
254	254	271129890	n	n	n	y	n	o35	life	I	S	F	J
255	255	271083773	n	n	n	y	n	o25	life	E	S	T	J
256	256	271589543	n	n	n	y	y	u25	life	I	S	F	J
257	257	271941366	n	n	y	y	y	o35	life	I	S	F	P
258	258	271408731	n	n	y	y	n	o35	norete	I	S	T	P
259	259	272117719	n	n	n	n	n	o50	life	I	S	T	J
260	260	272044542	n	y	n	y	n	o35	life	I	S	F	J
261	261	272188903	n	n	y	y	y	o50	life	I	S	T	J
262	262	273443974	n	n	y	y	y	o50	life	I	N	F	P
263	263	272840189	n	y	n	n	n	o50	life	E	N	F	J
264	264	273355708	n	n	n	n	n	o50	life	I	S	F	P
265	265	273655527	n	n	n	y	n	o25	life	I	N	F	P

SURVEY DATA

#	ori #	F1	F2	F3	F4	F5	F6	I1	I2	I3	I4	I5	I6	P1	P2	P3	P4	P5	P6
213	213	1	3	4	1	5	5	2	1	1	1	2	1	1	1	2	3	4	2
214	214	2	2	1	2	1	4	1	1	1	1	1	1	1	3	1	1	1	1
215	215	1	3	5	5	4	4	3	3	2	3	2	2	2	1	2	2	2	2
216	216	3	5	4	2	2	5	5	2	3	1	3	3	4	3	3	3	4	1
217	217	1	1	4	1	4	4	2	1	1	1	2	2	2	2	3	1	1	1
218	218	4	1	1	1	2	4	4	1	1	1	3	3	2	2	4	1	4	1
219	219	2	2	1	1	3	5	3	1	1	1	1	3	1	3	3	3	2	1
220	220	2	3	2	1	5	3	4	1	1	3	1	3	1	1	4	2	2	4
221	221	4	4	3	3	5	5	2	2	1	2	2	2	2	3	3	1	2	3
222	222	2	4	5	2	5	5	4	1	1	1	4	4	4	4	4	4	2	4
223	223	3	5	5	5	5	3	2	2	2	1	2	2	2	2	2	3	2	2
224	224	1	3	2	4	2	3	1	3	1	1	3	2	2	4	4	2	4	4
225	225	1	5	5	4	5	5	4	3	1	1	3	1	4	4	2	4	2	2
226	226	5	5	1	5	3	3	3	1	3	4	2	3	2	5	1	2	2	4
227	227	5	5	1	5	2	1	4	1	1	3	4	3	1	1	1	4	3	4
228	228	1	5	3	1	4	3	1	1	1	1	1	1	1	1	2	3	2	2
229	229	5	5	2	1	5	2	1	1	1	1	1	1	2	2	2	2	5	1
230	230	4	1	3	1	2	5	3	2	1	1	3	2	1	2	3	1	1	2
231	231	5	3	2	1	1	2	3	1	1	1	2	1	1	1	2	2	2	4
232	232	5	5	2	4	4	5	4	3	1	1	1	3	2	2	4	1	1	2
233	233	4	4	5	1	4	4	1	1	3	1	1	1	1	1	3	1	5	1
234	234	2	5	5	2	4	1	1	1	2	1	1	3	1	1	2	2	4	3
235	235	2	5	4	1	5	4	5	5	2	3	4	2	1	1	3	1	4	3
236	236	1	2	4	1	3	3	3	3	1	1	3	3	1	1	1	2	1	2
237	237	1	1	2	1	3	2	3	1	1	1	3	3	3	2	2	2	2	2
238	238	3	5	2	5	2	2	3	1	1	1	3	1	4	1	2	4	2	2
239	239	2	5	1	2	2	5	3	2	1	1	1	1	1	4	4	1	4	4
240	240	2	4	1	4	3	2	2	2	1	3	2	2	3	2	1	3	4	2
241	241	2	5	5	2	1	5	4	1	1	1	4	1	1	1	5	2	2	2
242	242	2	3	4	1	2	5	3	3	1	1	1	3	1	1	2	3	2	2
243	243	2	1	3	1	2	2	1	1	1	1	1	1	2	2	2	2	2	2
244	244	2	4	4	2	5	5	5	4	2	4	4	2	3	4	4	3	5	2
245	245	1	4	2	2	4	4	3	3	3	3	3	3	1	1	4	3	4	5
246	246	2	2	3	2	2	3	1	1	1	1	1	1	2	1	1	2	2	1
247	247	2	4	1	4	2	4	4	1	2	1	2	2	1	1	1	2	4	1
248	248	2	3	5	1	4	4	2	3	1	1	4	3	1	3	1	1	3	2
249	249	2	5	5	2	4	5	5	2	1	1	4	4	3	2	5	4	5	2
250	250	2	5	3	5	4	4	4	4	3	2	3	3	4	4	4	4	1	2
251	251	1	1	3	1	1	2	1	1	1	1	1	1	2	1	2	2	3	2
252	252	4	5	5	1	3	5	4	2	2	1	4	2	4	2	5	4	5	2
253	253	5	3	2	1	2	3	1	3	1	1	4	3	4	1	2	2	2	3
254	254	1	3	2	1	1	3	4	1	3	1	4	2	1	4	1	2	4	4
255	255	1	1	4	1	3	1	4	2	1	1	2	1	1	1	1	3	4	2
256	256	2	2	5	1	5	5	4	3	1	1	4	4	1	1	1	4	5	5
257	257	1	3	4	2	1	2	4	2	1	1	2	2	3	2	3	2	4	4
258	258	2	1	2	5	1	2	5	5	5	5	5	5	3	1	3	2	2	1
259	259	2	3	2	2	1	4	4	4	1	1	2	5	1	4	4	1	1	1
260	260	2	5	2	2	1	5	2	1	1	1	2	1	3	1	4	2	4	2
261	261	4	5	4	2	3	5	4	2	1	3	4	4	4	2	5	4	4	3
262	262	2	5	2	2	1	4	1	1	1	3	1	1	1	1	1	3	4	2
263	263	1	5	3	1	3	3	2	1	2	1	3	2	1	3	1	2	3	3
264	264	2	2	1	1	2	3	3	1	1	1	3	1	2	1	1	1	2	2
265	265	2	4	4	2	3	5	2	3	1	2	3	1	2	3	4	3	1	3

#	ori #	user ID	Design pro	Constru ction pro	Male	College	Shy	Age	Live USA	Extraver sion/Intr aversion	Sensing /Intuiti on	Thinking /Feeling	Judging/ Perceiving
					demographics					Meyers-Briggs			
266	266	274760647	n	n	y	y	y	o35	life	I	S	T	P
267	267	274674645	n	n	y	y	y	o35	noreter	I	S	T	P
268	268	275020491	n	n	n	y	n	o25	life	E	S	F	J
269	269	274859317	n	n	n	y	n	o35	life	E	S	T	J
270	270	274898853	n	n	n	y	n	o50	life	E	S	F	J
271	271	275048351	n	n	y	y	n	o50	life	E	S	T	P
272	272	275355327	n	n	n	y	n	o25	life	I	N	F	J
273	273	275463903	n	n	y	y	n	o50	life	I	S	T	J
274	274	277007525	y	n	n	y	n	o35	life	E	N	T	J
275	275	276515119	n	y	n	y	n	o25	life	E	N	F	J
276	276	278449171	n	n	y	y	n	o50	life	I	S	T	P
277	277	279379854	n	n	n	y	n	o35	life	E	N	F	J
278	278	278817309	n	n	n	n	n	o50	life	I	S	F	J
279	279	278846794	n	n	n	n	n	o50	life	E	S	T	J
280	280	279451008	n	n	n	n	y	o35	life	I	S	F	J
281	281	279647870	n	n	y	y	n	o35	life	E	N	F	J
282	282	279579929	n	n	y	y	n	o50	life	I	S	T	J
283	283	280204491	n	n	n	y	n	o35	life	E	S	T	J
284	284	281600590	n	n	n	y	n	o35	noreter	E	S	F	J
285	285	282334643	n	n	y	y	n	o35	life	I	N	T	P
286	286	284098805	n	n	n	n	n	o50	noreter	E	S	T	P
287	287	284618487	n	n	n	y	n	o25	life	I	S	T	J
288	288	285266961	n	n	n	n	n	o35	noreter	E	N	F	P
289	289	285637873	n	n	n	y	n	o50	life	I	S	T	J
290	290	286155655	n	n	n	y	n	o50	life	E	N	T	P
291	291	286215565	n	y	y	y	n	o50	noreter	E	N	T	J
292	292	286355068	n	n	n	n	n	o50	life	I	S	T	P
293	293	286370742	n	n	y	y	n	o50	life	E	N	T	P
294	294	286879233	n	n	y	n	n	o50	life	E	N	F	P
295	295	286899392	n	y	n	n	y	o50	life	I	S	T	J
296	296	287063131	n	n	n	n	n	o50	life	E	S	T	P
297	297	287274032	n	n	y	y	n	o50	life	E	S	F	P
298	298	287714083	n	y	n	n	n	o35	life	E	S	T	J
299	299	287823131	n	n	n	y	n	o50	life	I	S	F	J
300	300	288542446	n	y	n	y	n	o35	life	I	S	F	P
301	301	287936628	n	n	n	n	n	o35	life	E	N	F	P
302	302	288382433	n	n	n	y	y	o50	life	I	S	T	J
303	303	289048262	n	y	n	y	n	o25	life	E	S	T	J
304	304	288922830	n	y	n	n	y	o25	life	I	S	F	J
305	305	288927811	n	n	n	y	y	o50	life	I	N	F	J
306	306	289271662	y	n	n	y	n	o35	life	I	N	F	J
307	307	289490943	n	n	n	y	n	o35	life	E	N	F	J
308	308	289477416	n	n	n	y	n	o50	life	E	S	F	J
309	309	288768053	n	n	y	y	n	o50	life	I	S	T	J
310	310	289465702	n	n	n	y	n	o50	life	E	S	F	J
311	311	291045313	n	n	n	n	n	o35	life	E	N	F	J
312	312	294348569	n	n	n	y	n	o35	life	E	N	F	P
313	313	294989566	n	n	n	y	y	o50	life	I	S	F	P
314	314	294673008	n	y	n	n	n	o35	life	I	S	F	J
315	315	282497032	n	n	y	y	n	o50	noreter	I	N	F	P
316	316	295337381	n	n	y	y	n	o35	life	I	S	T	P
317	317	295429151	n	n	y	y	n	o50	life	E	N	F	P
318	318	296034138	n	y	n	n	n	o35	life	E	S	F	P

#	ori #	F1	F2	F3	F4	F5	F6	I1	I2	I3	I4	I5	I6	P1	P2	P3	P4	P5	P6
266	266	1	1	2	1	3	2	3	1	1	1	1	1	1	1	2	1	3	2
267	267	1	5	2	3	2	2	2	1	3	1	3	1	2	1	2	3	3	4
268	268	2	3	2	1	2	2	1	1	1	1	1	1	2	1	1	4	2	2
269	269	5	3	4	1	4	5	3	3	2	1	3	3	1	3	3	1	2	3
270	270	1	3	2	1	4	5	4	1	3	1	2	1	2	4	5	2	5	4
271	271	2	2	5	4	2	5	4	2	3	1	2	3	1	2	4	3	2	3
272	272	1	5	5	2	3	5	2	2	1	1	4	4	5	2	3	1	3	1
273	273	2	3	2	2	2	2	4	4	3	2	4	2	2	1	3	1	1	2
274	274	2	2	1	2	2	2	3	1	3	1	3	1	1	1	2	2	2	2
275	275	5	5	1	1	1	4	3	1	1	1	4	4	5	4	1	3	1	5
276	276	2	4	1	1	3	5	2	2	1	2	4	2	1	2	3	2	2	2
277	277	3	3	3	2	4	4	2	3	3	3	3	2	1	3	2	3	2	4
278	278	5	3	2	2	2	1	1	3	1	1	1	1	1	2	4	1	1	4
279	279	1	3	5	1	4	4	4	2	3	1	4	4	1	3	3	2	3	3
280	280	2	3	5	3	5	5	4	1	1	1	4	4	1	2	3	4	4	3
281	281	4	5	1	4	4	2	4	4	3	4	2	2	1	2	3	1	4	2
282	282	2	5	1	2	2	3	3	3	3	3	3	1	1	1	2	2	1	4
283	283	1	2	1	1	1	3	3	3	1	1	1	1	4	4	1	1	1	2
284	284	1	4	2	2	1	5	5	3	1	1	3	1	2	4	1	2	1	4
285	285	1	4	3	3	2	2	2	1	1	1	3	1	1	1	2	1	2	1
286	286	3	4	4	2	5	5	4	2	3	2	4	2	3	1	4	1	1	1
287	287	4	4	2	3	4	4	3	2	1	1	3	1	4	3	4	3	4	4
288	288	5	5	5	1	2	5	2	1	1	1	3	3	2	3	2	2	5	5
289	289	4	4	1	3	2	4	4	1	1	3	3	3	4	4	4	2	5	4
290	290	2	5	3	5	3	5	3	4	1	1	2	1	3	3	2	2	1	2
291	291	2	2	3	1	2	2	2	3	1	1	2	3	1	1	4	3	4	1
292	292	1	3	3	5	3	3	1	1	1	1	1	1	1	2	2	2	2	2
293	293	2	2	1	3	2	2	2	2	2	2	2	2	1	1	2	1	2	3
294	294	2	5	5	3	2	4	1	3	1	1	1	1	2	2	3	1	3	2
295	295	2	4	5	2	5	5	1	3	1	1	3	2	1	2	1	2	1	1
296	296	1	1	3	1	5	5	2	1	1	1	1	1	2	2	4	2	4	4
297	297	5	4	3	3	2	2	4	1	1	1	2	2	1	1	3	3	3	3
298	298	2	4	4	1	2	4	2	1	1	1	3	1	2	1	4	3	1	1
299	299	4	4	4	4	4	4	1	3	3	1	3	1	2	1	3	1	5	2
300	300	2	4	2	2	3	5	4	1	1	3	4	3	2	2	3	1	3	2
301	301	5	5	4	5	2	5	5	4	3	3	3	3	4	5	4	2	5	3
302	302	1	3	1	3	1	3	1	5	1	1	3	3	1	1	1	2	1	3
303	303	2	2	3	2	2	4	3	2	1	1	2	2	1	3	4	2	2	2
304	304	1	2	3	2	2	4	4	4	1	2	4	1	2	1	4	4	4	2
305	305	1	1	4	1	2	2	1	1	1	1	1	1	1	1	2	1	3	2
306	306	5	5	4	4	1	2	2	3	1	1	3	4	1	2	2	3	5	3
307	307	4	3	4	1	5	5	5	1	3	1	4	3	2	5	1	4	2	2
308	308	1	4	1	2	5	5	5	3	3	2	2	3	2	4	5	2	4	5
309	309	3	5	5	1	2	2	1	3	3	1	1	1	1	1	1	4	2	4
310	310	2	3	2	2	5	4	2	3	1	1	2	2	2	1	3	2	2	2
311	311	4	3	1	1	1	5	1	4	1	1	1	1	2	2	2	3	1	2
312	312	4	2	2	2	2	5	3	2	1	3	2	3	2	2	1	1	4	4
313	313	2	4	4	2	5	4	3	2	2	1	2	3	1	3	4	2	3	2
314	314	1	3	2	2	4	2	2	1	1	1	3	3	1	4	1	2	4	2
315	315	3	5	2	5	3	2	3	2	1	4	3	3	2	2	2	2	3	3
316	316	5	4	1	3	4	5	3	4	3	4	5	2	3	1	1	4	3	3
317	317	1	1	4	2	3	3	1	2	1	1	2	2	2	2	4	1	4	1
318	318	4	5	4	2	2	4	4	1	1	1	2	3	3	3	3	4	1	1

#	ori #	user ID	demographics							Meyers-Briggs			
			Design pro	Construction pro	Male	College	Shy	Age	Live USA	Extraversion/Introversion	Sensing/Intuition	Thinking/Feeling	Judging/Perceiving
319	319	296680844	n	n	y	y	n	o50	life	E	N	T	P
320	320	299337303	n	n	n	y	n	o35	life	E	S	T	J
321	321	299347907	n	n	n	y	n	o50	life	I	S	F	J
322	322	301191650	n	n	y	n	y	o50	life	I	N	F	J
323	323	303573229	n	n	y	y	n	o50	life	I	S	F	J
324	324	304013121	n	n	n	n	n	o50	life	I	S	F	P
325	325	305537905	n	n	n	y	n	o50	noreter	E	N	T	J
326	326	305579600	n	n	n	y	n	o50	life	I	S	T	J
327	327	306151070	n	n	n	y	n	o50	life	E	S	T	J
328	328	307136237	n	n	n	y	n	o50	life	E	N	T	P
329	329	307276010	n	n	n	y	n	o50	life	E	N	F	P
330	330	307488502	n	n	n	y	n	o50	life	I	S	T	J
331	331	307626056	n	n	n	y	y	o50	life	I	S	F	J
332	332	307675458	n	n	n	y	n	o50	life	E	N	F	J
333	333	308372340	n	n	y	y	n	o35	noreter	E	S	T	P
334	334	309886203	y	n	n	y	n	o50	life	I	S	T	J
335	335	310752604	n	n	n	y	n	o35	life	I	S	T	J
336	336	311815358	n	n	y	y	n	o50	life	E	S	T	J
337	337	312437516	n	n	n	y	n	u25	life	I	S	T	P
338	338	311991644	n	n	n	y	y	o50	noreter	I	S	T	P
339	339	312471589	n	n	y	y	y	o50	life	I	S	T	J
340	340	313084004	n	n	n	y	n	o50	life	I	N	F	J
341	341	314323829	n	n	n	y	n	o50	life	I	S	F	J
342	342	314448861	n	n	n	y	y	o50	life	I	S	T	J
343	343	315299931	n	n	n	n	y	o50	life	I	S	T	P
344	344	315652211	n	n	n	y	n	o25	life	E	S	F	P
345	345	318751558	n	y	n	y	n	o50	life	I	N	F	J
346	346	320941653	n	n	n	n	n	o50	life	I	S	F	J
347	347	322695275	y	y	y	n	n	o50	life	I	N	F	P
348	348	325309085	n	n	n	y	n	o25	life	I	S	T	J
349	349	333008101	n	n	n	y	n	o35	life	E	S	F	P
350	350	337834766	n	n	n	y	y	o35	life	I	S	F	J
351	351	303726610	n	n	y	y	n	o50	noreter	E	S	T	J
352	352	343625299	n	n	n	y	n	o50	life	I	S	T	J
353	353	347202654	n	y	n	y	n	o25	life	E	N	T	J
354	354	348282884	n	n	n	n	n	o50	life	E	S	F	P
355	355	348278765	n	n	n	y	y	o50	life	I	S	T	J
356	356	348746795	n	y	y	y	n	o50	life	I	N	T	P
357	357	348986444	n	n	n	y	n	o50	life	E	S	T	P
358	358	349276658	n	n	y	y	n	o50	life	I	S	F	J
359	359	349622160	n	n	n	n	y	o50	life	I	S	F	P
360	360	350007876	n	n	n	n	n	o50	noreter	I	S	T	J
361	361	350065966	n	n	y	y	n	o50	life	I	S	T	P
362	362	350221088	n	n	y	y	n	o50	life	I	N	T	J
363	363	350405946	n	n	n	y	n	o50	life	E	N	F	P
364	364	351232127	n	n	n	n	n	o25	life	E	S	F	P
365	365	351222847	n	n	n	y	y	o50	life	I	S	F	P
366	366	351315900	y	n	y	n	n	o50	life	I	S	T	P
367	367	351450058	n	n	n	y	n	o25	life	E	S	F	P
368	368	352415588	n	n	y	y	n	o35	life	E	N	T	P
369	369	352397218	n	n	n	y	n	o25	life	I	S	T	P
370	370	353095732	n	y	n	y	n	o25	life	E	N	F	P
371	371	353161901	n	n	n	y	y	o35	life	I	N	F	J

#	ori #	F1	F2	F3	F4	F5	F6	I1	I2	I3	I4	I5	I6	P1	P2	P3	P4	P5	P6
319	319	1	4	4	2	5	4	2	1	1	1	2	2	1	2	2	1	1	4
320	320	1	1	5	5	4	4	3	1	1	1	5	3	1	4	2	1	1	1
321	321	2	3	4	1	2	4	1	1	1	1	1	1	2	2	2	1	2	1
322	322	2	5	5	1	2	2	1	3	1	1	3	1	2	1	4	2	5	2
323	323	1	2	5	1	3	3	2	1	3	1	1	1	1	1	2	1	2	2
324	324	3	2	4	4	4	4	4	2	1	2	2	1	1	1	2	4	2	2
325	325	4	3	5	1	4	3	1	2	1	2	3	2	1	1	1	1	4	3
326	326	1	5	4	5	3	2	1	1	1	4	2	1	4	3	1	3	1	3
327	327	5	5	4	1	2	3	4	4	3	1	4	4	2	1	4	3	4	4
328	328	5	1	1	5	2	1	1	1	1	1	1	1	1	5	2	3	1	1
329	329	1	4	4	2	2	5	4	1	1	4	3	3	3	3	3	2	3	2
330	330	1	1	2	1	3	3	4	1	2	3	5	1	3	2	2	2	2	2
331	331	2	4	4	2	4	4	4	4	2	1	3	3	2	4	4	2	4	4
332	332	2	5	5	1	4	4	3	2	2	3	2	2	2	2	3	2	2	2
333	333	5	5	1	3	3	4	3	1	1	1	4	4	4	1	4	4	1	5
334	334	4	5	1	1	4	5	4	4	1	1	4	2	2	2	4	2	1	2
335	335	1	1	5	1	1	1	1	3	1	1	3	3	1	1	2	3	1	3
336	336	1	3	1	3	2	1	4	1	2	1	1	1	1	1	4	3	1	1
337	337	1	1	3	3	3	2	5	2	1	3	4	5	2	4	3	2	1	3
338	338	1	3	3	3	1	5	3	1	3	1	3	3	1	1	3	3	3	3
339	339	2	3	1	2	2	1	2	4	1	1	4	3	1	1	2	2	4	2
340	340	1	3	3	2	3	5	3	1	3	1	1	1	4	4	4	4	4	4
341	341	2	5	5	4	5	3	1	1	3	1	2	3	4	4	5	2	4	4
342	342	2	5	2	2	4	5	2	3	1	2	4	4	1	2	2	1	2	2
343	343	2	5	5	1	2	5	3	1	1	1	1	2	2	1	1	3	4	3
344	344	4	5	3	2	3	5	4	3	1	3	4	3	4	3	2	2	2	3
345	345	5	5	1	4	3	5	4	1	3	2	1	1	1	1	4	1	4	2
346	346	1	5	5	1	2	4	4	3	1	1	3	3	3	4	5	3	2	5
347	347	2	2	1	1	3	3	1	1	3	1	1	1	4	4	4	2	5	2
348	348	2	2	2	2	1	2	3	1	1	3	3	2	1	1	4	2	2	2
349	349	2	5	1	1	1	2	1	3	1	1	2	3	2	2	1	1	1	1
350	350	5	4	4	1	2	5	3	2	1	1	2	2	1	3	3	2	3	4
351	351	3	3	5	1	5	1	4	2	1	2	3	2	1	1	4	2	1	5
352	352	1	2	4	1	2	2	2	2	2	2	2	2	2	1	3	1	3	3
353	353	1	1	4	2	3	3	3	2	1	1	3	1	2	3	2	2	3	2
354	354	1	5	5	1	4	2	2	2	2	2	2	2	1	1	3	1	2	2
355	355	4	2	2	2	2	2	3	3	1	1	1	1	2	2	4	2	4	4
356	356	2	3	1	1	3	1	4	2	1	3	4	3	4	4	2	2	2	2
357	357	3	5	4	1	3	5	2	1	4	1	2	2	5	2	4	2	5	2
358	358	2	5	3	2	3	4	2	2	3	1	2	2	2	3	2	2	2	3
359	359	5	5	2	5	1	5	2	3	1	1	3	3	2	2	1	2	1	2
360	360	4	4	4	5	4	4	3	1	1	1	4	2	1	1	4	3	3	1
361	361	4	5	4	4	2	4	4	1	4	2	1	2	3	5	1	4	4	3
362	362	2	3	4	1	3	4	1	2	2	1	2	2	4	4	2	4	2	1
363	363	2	2	5	1	5	5	2	2	1	1	5	5	2	2	3	3	2	3
364	364	3	3	3	3	3	3	2	2	2	2	2	2	4	4	4	4	4	4
365	365	4	4	5	4	5	4	5	2	1	1	4	1	5	4	2	2	4	5
366	366	2	4	4	2	4	4	2	4	1	1	1	2	4	4	4	1	4	1
367	367	1	5	5	1	3	5	2	4	2	4	2	4	2	4	4	3	4	5
368	368	2	2	3	2	4	3	4	2	3	2	4	4	2	2	4	3	2	4
369	369	2	3	2	2	2	3	4	1	1	1	1	1	4	1	1	2	1	5
370	370	5	5	2	2	4	3	4	1	1	1	1	1	2	1	4	4	4	3
371	371	1	1	1	1	2	5	5	1	1	1	1	5	4	5	4	1	4	3

#	ori #	user ID	Design pro	Construction pro	Male	College	Shy	Age	Live USA	Extraversion/Introversion	Sensing/Intuition	Thinking/Feeling	Judging/Perceiving
						demographics				Meyers-Briggs			
372	372	353382281	n	y	n	y	n	o35	life	E	S	F	J
373	373	353954845	n	n	n	n	n	o50	life	E	S	F	J
374	374	354365683	n	n	n	n	y	o50	life	I	S	F	J
375	375	353550288	n	n	n	y	n	o50	life	I	S	F	P
376	376	354910153	n	n	n	n	n	o35	life	E	S	T	P
377	377	355307983	n	n	n	y	y	o50	life	I	S	F	P
378	378	357180009	n	n	y	y	n	o50	life	I	S	F	P
379	379	358876274	y	y	y	y	n	o50	life	I	S	T	J
380	380	360100672	n	n	n	n	n	o35	norete	E	N	F	J
381	381	361399263	n	n	y	y	n	o35	life	E	S	T	J
382	382	362390499	n	n	y	y	y	o50	life	I	S	T	J
383	383	365234180	n	n	n	y	n	o35	life	E	S	F	P
384	384	368143194	n	n	y	y	y	o25	life	I	S	T	J
385	385	368587184	n	n	n	y	n	o50	life	E	N	F	P
386	386	368213862	n	n	n	y	n	o35	life	I	S	F	J
387	387	371066771	n	n	y	y	n	o50	life	I	S	T	J
388	388	373804094	n	n	n	y	n	o35	life	E	S	F	P
389	389	374035577	n	n	n	y	n	o50	life	E	S	T	P
390	390	376343934	n	n	n	y	n	o35	life	E	N	F	P
391	391	377282325	n	n	n	y	n	o50	life	E	S	T	J
392	392	377321873	n	n	y	n	n	o50	life	E	N	T	P
393	393	384769079	n	n	n	y	n	o25	life	I	S	T	J
394	394	385296383	n	y	n	y	n	o25	life	I	S	F	J
395	395	386150052	n	n	y	n	n	o50	life	I	S	T	J
396	396	386732519	y	n	n	y	y	o50	life	I	S	T	J
397	397	389201899	n	n	n	y	y	o50	life	I	N	F	P
398	398	392136772	n	n	n	y	n	o35	life	I	S	F	P
399	399	394906841	n	n	n	y	y	o35	life	I	S	T	J
400	400	401776925	n	n	n	y	n	o35	life	E	S	F	J
401	401	402934960	n	n	y	y	n	o50	life	E	N	T	P
402	402	404431918	n	n	y	y	n	o50	life	E	S	T	J
403	403	421029314	n	n	y	y	n	o50	life	I	S	T	J
404	404	427309405	n	y	n	n	n	o35	life	E	N	F	J
405	405	431161459	n	n	n	n	y	o50	life	I	S	F	J
406	406	438134404	n	n	y	y	n	o35	life	E	S	F	J
407	407	439394917	n	n	n	n	y	o50	life	I	S	T	J
408	408	443238688	n	n	y	y	n	o50	life	I	S	T	J
409	409	452661887	n	n	n	y	n	o25	life	E	S	F	J
410	410	459014019	n	n	n	y	y	o35	life	E	N	F	J
411	411	459257583	n	n	y	y	n	o35	life	E	S	T	J
412	412	463308087	n	n	n	y	n	o35	life	I	S	T	J
413	413	465461793	n	n	n	y	y	o50	life	I	N	F	J
414	414	467480173	y	y	y	y	n	o50	life	I	N	T	P
415	415	476628351	n	n	n	n	y	o50	life	I	S	F	J
416	416	482131108	n	n	n	y	y	o35	life	I	S	F	J
417	417	514591329	n	n	n	y	n	o35	life	E	S	F	J
418	418	522115198	n	n	y	n	y	o35	life	I	S	F	J
419	419	522549391	n	n	n	y	y	o35	norete	I	N	F	P
420	420	524636253	n	n	y	y	n	o50	life	E	S	T	P
421	421	527704531	n	n	y	y	n	o35	life	E	S	T	J
422	422	527925532	n	n	n	y	n	o35	life	I	S	T	J
423	423	528025629	n	y	y	n	y	o25	life	I	S	T	J
424	424	529820602	n	y	y	n	n	o35	life	I	S	F	P

SURVEY DATA

#	ori #	F1	F2	F3	F4	F5	F6	I1	I2	I3	I4	I5	I6	P1	P2	P3	P4	P5	P6
372	372	5	5	5	3	3	4	3	3	1	3	4	3	3	1	4	4	1	4
373	373	4	4	4	1	3	4	3	2	1	1	3	3	1	4	4	4	4	4
374	374	1	1	2	1	1	4	3	1	3	3	1	1	2	2	2	1	4	4
375	375	1	3	4	1	1	5	3	1	1	1	3	1	1	1	1	4	2	3
376	376	1	4	1	1	4	4	1	1	1	1	3	3	1	4	5	1	1	1
377	377	1	4	3	1	5	2	2	1	1	1	4	1	2	4	5	5	3	2
378	378	4	5	5	1	3	4	3	2	1	2	3	2	2	3	3	2	1	1
379	379	3	3	1	2	2	2	2	2	1	1	3	2	1	1	1	1	1	1
380	380	1	1	5	1	5	5	2	2	1	2	2	2	4	4	5	1	4	1
381	381	2	4	1	2	2	3	4	1	2	1	2	3	2	2	4	2	4	2
382	382	1	1	2	2	2	2	2	2	2	2	2	2	2	1	2	2	4	2
383	383	2	4	4	1	1	1	2	1	1	1	2	1	3	2	3	3	2	3
384	384	2	5	5	2	4	2	4	2	1	2	4	4	3	1	4	1	4	4
385	385	1	2	5	1	5	4	2	2	2	1	4	3	2	2	1	1	1	1
386	386	2	5	1	2	2	5	4	1	1	1	2	1	2	1	2	3	4	4
387	387	4	5	5	4	3	2	5	5	1	1	5	2	3	1	5	5	1	5
388	388	3	5	3	1	3	5	2	2	2	2	2	2	2	4	3	2	3	2
389	389	2	5	5	2	5	4	2	3	1	1	3	3	1	1	4	1	4	4
390	390	5	5	2	2	5	5	4	1	1	1	4	5	3	4	1	4	3	4
391	391	5	5	4	5	5	5	4	3	1	3	4	3	4	4	4	4	2	4
392	392	1	3	2	5	1	1	2	1	2	1	2	2	4	4	2	3	4	3
393	393	1	4	5	1	4	5	4	4	1	1	4	2	2	1	1	3	1	1
394	394	2	3	1	2	2	5	2	2	2	2	2	3	2	4	2	3	1	3
395	395	4	1	1	1	4	4	3	3	3	1	1	1	1	2	2	4	4	2
396	396	2	2	3	1	4	5	3	1	3	1	2	3	2	3	2	2	3	4
397	397	5	2	4	2	5	4	3	3	3	1	3	1	1	3	4	3	3	3
398	398	1	3	4	2	1	4	4	1	1	1	4	2	1	1	1	3	3	4
399	399	1	1	4	1	2	5	2	1	1	1	2	1	1	3	1	2	2	2
400	400	4	3	4	4	3	4	1	3	1	1	1	1	1	1	2	5	2	5
401	401	5	2	2	5	2	3	3	2	1	1	3	2	3	2	3	1	3	1
402	402	1	5	5	1	5	5	1	3	3	1	1	1	1	2	4	1	2	1
403	403	3	2	3	1	3	3	2	1	1	3	3	3	3	3	4	2	3	2
404	404	5	5	5	1	1	5	3	1	1	1	1	1	1	1	4	1	2	4
405	405	4	2	4	1	2	2	2	1	1	1	1	1	4	2	4	4	5	4
406	406	2	3	3	4	3	5	2	1	1	1	2	3	1	2	2	3	1	3
407	407	1	1	3	1	1	4	3	1	3	1	1	1	2	2	1	2	2	2
408	408	2	5	1	1	1	4	3	3	1	1	1	2	1	2	2	1	1	1
409	409	5	5	4	2	5	5	4	1	3	3	4	3	4	4	5	2	5	5
410	410	1	4	2	1	2	4	1	3	1	1	1	1	2	1	3	2	3	3
411	411	2	2	5	1	2	5	3	3	1	2	3	3	2	1	3	2	1	2
412	412	2	2	4	4	2	1	2	2	1	3	2	2	2	2	4	3	3	2
413	413	3	3	1	3	1	1	3	3	3	3	3	3	2	2	2	2	4	4
414	414	2	4	1	2	2	4	3	3	3	3	5	5	2	2	5	1	4	2
415	415	2	4	5	2	5	5	3	3	1	1	3	3	2	1	1	5	4	4
416	416	4	1	3	1	2	2	2	1	1	1	1	1	2	1	4	1	4	2
417	417	4	4	2	2	5	5	3	1	1	1	4	1	4	2	1	2	1	2
418	418	1	5	3	1	1	5	1	1	1	1	1	1	2	1	3	4	2	1
419	419	3	3	1	3	2	3	1	2	2	1	2	1	2	3	3	2	2	2
420	420	2	3	1	3	3	2	3	3	1	1	3	3	3	1	2	1	3	2
421	421	2	2	3	2	2	5	4	1	1	3	4	3	3	2	1	2	4	2
422	422	1	3	5	1	2	1	3	1	1	1	3	3	1	1	2	2	1	4
423	423	2	2	3	1	2	3	2	1	1	1	3	1	1	2	4	2	2	2
424	424	2	5	5	1	4	2	1	4	3	1	2	3	2	3	2	3	2	2

#	ori #	user ID	demographics							Meyers-Briggs			
			Design pro	Construction pro	Male	College	Shy	Age	Live USA	Extraversion/Introversion	Sensing/Intuition	Thinking/Feeling	Judging/Perceiving
425	425	531164813	n	n	n	y	n	o50	life	I	N	F	J
426	426	535392245	n	n	n	n	n	o50	life	I	S	F	J
427	427	538652039	n	n	y	n	y	o50	life	I	S	T	P
428	428	544889598	n	n	n	y	n	o35	life	E	S	F	P
429	429	545762800	n	n	n	n	y	o50	life	I	S	F	P
430	430	548026968	n	y	n	y	n	o35	life	E	S	T	P
431	431	552738034	n	n	y	y	y	o50	noreten	I	S	F	P
432	432	552898573	n	n	n	n	n	u25	life	I	S	F	P
433	433	555054974	n	n	n	y	n	o50	life	E	S	F	P
434	434	566832051	y	n	y	y	n	o50	life	E	N	T	P
435	435	573254979	n	n	n	y	y	o50	noreten	E	N	F	P
436	436	590903075	n	n	n	y	n	o50	life	E	S	F	P
437	437	622497781	n	y	y	n	n	o35	life	I	N	T	J
438	438	626885167	n	n	y	y	y	o50	life	I	N	T	P
439	439	628185069	n	n	n	n	y	o50	life	I	S	F	J
440	440	629001033	n	n	n	y	n	o35	life	E	N	T	J
441	441	653769318	n	n	n	y	n	o35	life	I	S	F	J
442	442	691268426	y	y	n	y	y	o35	life	I	S	F	J

	y	26	76	144	309	114	Count		E	190		J	269
		6%	17%	33%	70%	26%	%			43%			61%
	n	416	366	298	133	328	Count		I	252		P	173
		94%	83%	67%	30%	74%	%			57%			39%
		100%	100%	100%	100%	100%				100%			100%

u25	15	3%
o25	61	14%
o35	158	36%
o50	207	47%
441	100%	

S	310
	70%
N	132
	30%
100%	

never	1	0%
five	1	0%
ten	2	0%
moreten	33	7%
life	404	91%
441	100%	

T	215
	49%
F	227
	51%
100%	

Check Data		442
1	29%	
2	25%	
3	18%	
4	18%	
5	10%	
% total	100%	

#	ori #	Survey																	
		F1	F2	F3	F4	F5	F6	I1	I2	I3	I4	I5	I6	P1	P2	P3	P4	P5	P6
425	425	2	5	2	1	5	4	1	1	3	1	1	1	2	2	3	1	3	3
426	426	4	4	4	1	5	5	3	1	1	1	1	1	1	2	4	2	2	2
427	427	3	2	1	2	5	2	4	2	2	4	2	2	2	1	4	2	4	1
428	428	1	3	4	1	3	5	3	1	1	1	3	3	4	4	4	4	4	2
429	429	3	4	2	3	2	3	1	3	2	1	2	3	2	1	2	3	2	3
430	430	3	5	5	1	5	5	5	2	2	1	1	1	1	1	2	2	1	3
431	431	2	4	2	1	3	2	1	3	1	1	2	2	2	1	1	2	2	2
432	432	4	5	1	1	4	1	1	1	1	1	1	1	4	1	4	4	4	5
433	433	2	3	2	4	2	4	3	3	2	1	3	3	2	2	1	2	4	2
434	434	4	4	3	2	4	4	1	1	2	1	4	4	2	1	1	1	2	4
435	435	3	5	4	4	5	5	4	1	1	2	4	4	5	4	4	1	4	4
436	436	5	5	4	1	1	4	1	1	1	1	3	1	2	2	1	2	5	2
437	437	1	2	1	3	2	3	3	2	3	1	2	3	3	2	3	3	2	4
438	438	3	4	4	1	3	4	2	2	3	3	4	1	4	2	4	2	4	4
439	439	4	4	4	1	4	4	3	3	1	3	3	3	4	4	4	4	4	4
440	440	1	1	3	4	4	5	5	1	2	2	2	1	1	2	2	4	1	2
441	441	2	3	1	2	4	3	3	3	1	1	2	1	3	1	3	1	3	3
442	442	4	5	4	2	4	5	3	1	1	3	3	3	2	2	4	4	4	1
		118	36	94	189	61	36	91	196	286	300	105	161	145	155	83	107	91	80
		27%	8%	21%	43%	14%	8%	21%	44%	65%	68%	24%	36%	33%	35%	19%	24%	21%	18%
		158	70	110	120	140	92	93	96	63	57	107	94	154	134	107	163	114	154
		36%	16%	25%	27%	32%	21%	21%	22%	14%	13%	24%	21%	35%	30%	24%	37%	26%	35%
		36	91	61	49	81	61	125	102	79	63	130	130	53	55	73	93	60	71
		8%	21%	14%	11%	18%	14%	28%	23%	18%	14%	29%	29%	12%	12%	17%	21%	14%	16%
		68	92	105	47	86	95	103	36	13	19	83	42	78	80	148	70	131	104
		15%	21%	24%	11%	19%	21%	23%	8%	3%	4%	19%	10%	18%	18%	33%	16%	30%	24%
		62	153	72	37	74	158	30	12	1	3	17	15	12	18	31	9	46	33
		14%	35%	16%	8%	17%	36%	7%	3%	0%	1%	4%	3%	3%	4%	7%	2%	10%	7%
		442																	
		2.54	3.58	2.89	2.15	2.94	3.56	2.75	2.03	1.60	1.57	2.55	2.22	2.23	2.26	2.86	2.35	2.83	2.67
		1.39	1.32	1.41	1.30	1.32	1.37	1.22	1.12	0.90	0.93	1.15	1.14	1.16	1.23	1.26	1.07	1.33	1.23
		0.13	0.123	0.131	0.122	0.123	0.128	0.113	0.104	0.084	0.087	0.108	0.106	0.108	0.114	0.118	0.1	0.124	0.1143
		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

APPENDIX D

FAÇADE PREFERENCES	F1	F2	F3	F4	F5	F6
GENERAL	2.54	3.58	2.89	2.15	2.94	3.56
INFJ	2.31	3.14	2.72	2.16	2.67	3.13
ESFJ	2.41	3.81	2.96	1.93	3.15	3.93
ESTP	2.76	4.12	3.00	2.18	3.47	4.18
ISTJ	2.34	3.27	2.75	1.95	2.79	3.29
ENFP	2.97	3.97	3.06	2.42	3.10	3.68
ESFP	2.69	4.27	3.19	1.81	2.69	3.77
INTJ	2.20	3.20	2.70	2.10	2.90	3.20
INFP	2.90	3.62	2.43	2.19	3.33	3.48
INTP	2.69	4.00	2.62	3.15	2.62	2.92
ENFJ	2.75	3.56	3.00	1.44	3.25	3.81
ESTJ	2.52	3.29	3.15	2.33	2.83	3.63
ISFJ	2.56	3.61	2.88	1.91	3.11	3.92
ISTP	2.48	3.72	2.80	2.76	2.80	3.84
ISFP	2.54	3.69	3.04	1.96	2.92	3.23
ENTJ	2.27	2.82	3.27	2.36	3.09	3.09
ENTP	2.36	3.00	2.36	3.07	2.64	2.64

FAÇADE PREFERENCES	F1	F2	F3	F4	F5	F6	AVG
GENERAL	2.54	3.58	2.89	2.15	2.94	3.56	2.94
INT	2.48	3.65	2.65	2.70	2.74	3.04	2.88
ESP	2.72	4.21	3.12	1.95	3.00	3.93	3.16
ESJ	2.48	3.48	3.08	2.19	2.95	3.73	2.98
ISJ	2.44	3.43	2.81	1.93	2.94	3.57	2.85
ISP	2.51	3.71	2.92	2.35	2.86	3.53	2.98
ENF	2.89	3.83	3.04	2.09	3.15	3.72	3.12
INF	2.65	3.54	2.54	2.16	2.86	3.35	2.85
ENT	2.32	2.92	2.76	2.76	2.84	2.84	2.74

- ⬜ BELOW AVG
- 🟨 ABOVE AVG

INTERIOR PREFERENCES	I1	I2	I3	I4	I5	I6
GENERAL	2.75	2.03	1.60	1.57	2.55	2.22
INFJ	2.56	1.99	1.79	1.74	2.41	2.23
ESFJ	2.78	2.04	1.89	1.67	2.41	2.04
ESTP	2.82	2.00	1.65	1.47	2.59	2.47
ISTJ	2.84	2.17	1.62	1.55	2.66	2.19
ENFP	2.81	1.74	1.68	2.00	2.87	2.74
ESFP	2.81	2.15	1.58	1.77	2.77	2.65
INTJ	2.80	2.10	1.50	1.50	2.50	2.40
INFP	2.62	2.33	1.57	1.62	2.62	2.00
INTP	2.62	1.85	1.46	2.15	3.23	2.15
ENFJ	3.06	2.06	1.94	1.50	2.38	1.88
ESTJ	2.73	1.98	1.40	1.35	2.54	2.15
ISFJ	2.48	1.92	1.47	1.39	2.17	2.02
ISTP	2.92	2.24	2.00	1.92	2.48	2.44
ISFP	2.58	2.31	1.23	1.42	2.73	2.00
ENTJ	2.91	1.64	1.45	1.45	3.09	2.55
ENTP	2.71	1.86	1.79	1.43	2.57	2.14

INTERIOR PREFERENCES	I1	I2	I3	I4	I5	I6	AVG
GENERAL	2.75	2.03	1.60	1.57	2.55	2.22	2.12
INT	2.70	1.96	1.48	1.87	2.91	2.26	2.20
ESP	2.81	2.09	1.60	1.65	2.70	2.58	2.24
ESJ	2.75	2.00	1.57	1.47	2.49	2.11	2.06
ISJ	2.68	2.06	1.55	1.48	2.44	2.11	2.05
ISP	2.86	2.27	1.61	1.65	2.61	2.31	2.22
ENF	2.89	1.85	1.77	1.83	2.70	2.45	2.25
INF	2.57	2.05	1.62	1.51	2.22	1.95	1.99
ENT	2.80	1.76	1.64	1.44	2.80	2.32	2.13

- ⬜ BELOW AVG
- 🟨 ABOVE AVG

ESP'S CONSISTENTLY ABOVE AVG
ISJ'S CONSISTENTLY BELOW AVG

FAÇADE EXX

MOST VARIANCE ON MOST PREFERRED

FAÇADE IXX
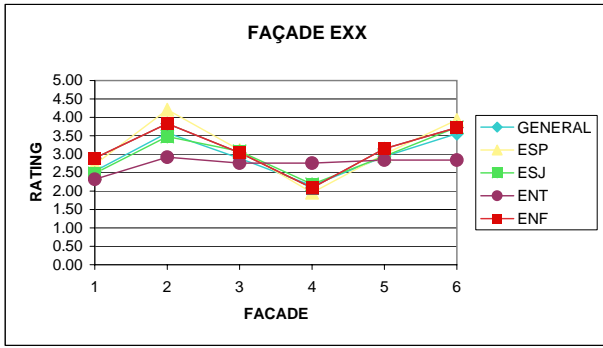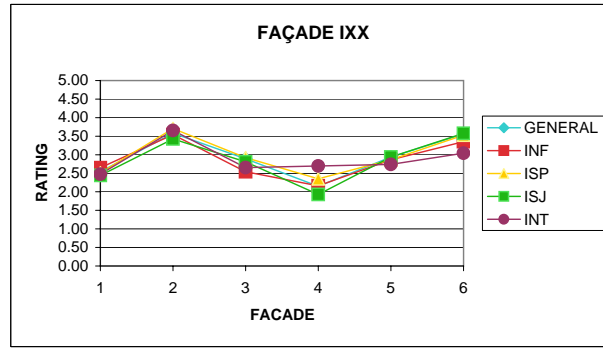
INT'S, ENT'S FLAT ON FACADES - VERY LITTLE PREFERENCE

INTERIOR EXX

INTERIOR IXX
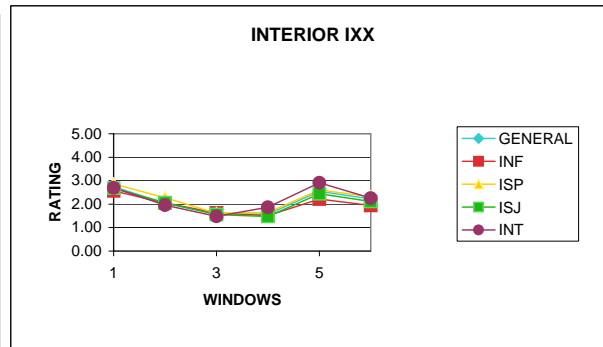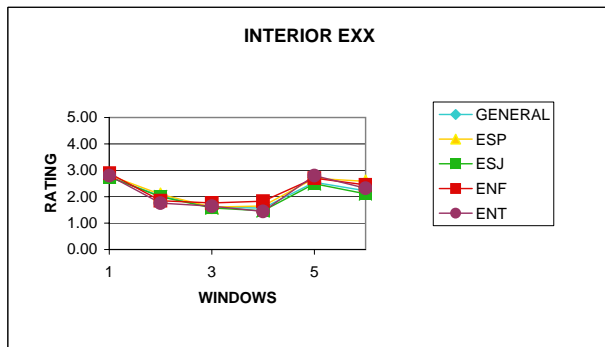
INT'S, ENT'S AGAIN VERY SIMILAR IN PREFERENCE
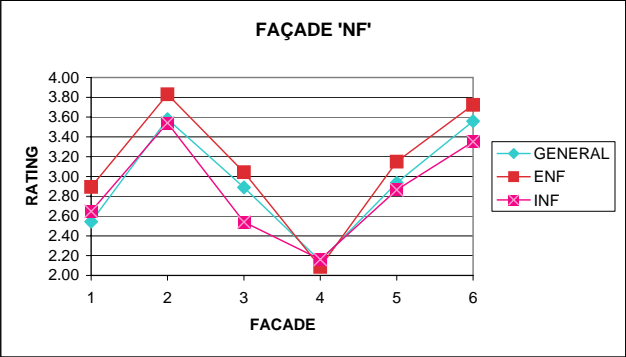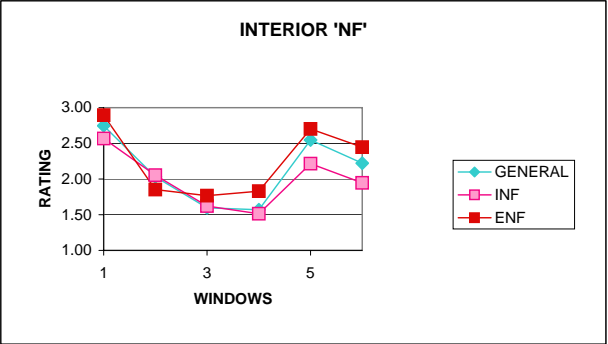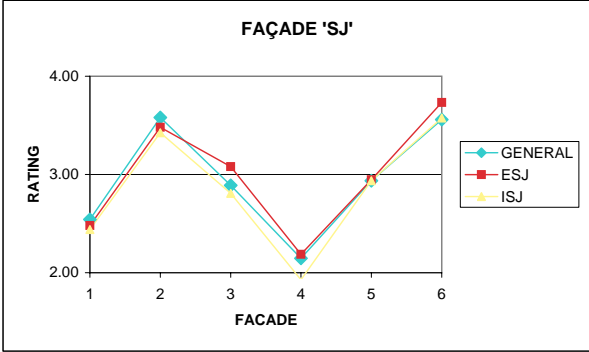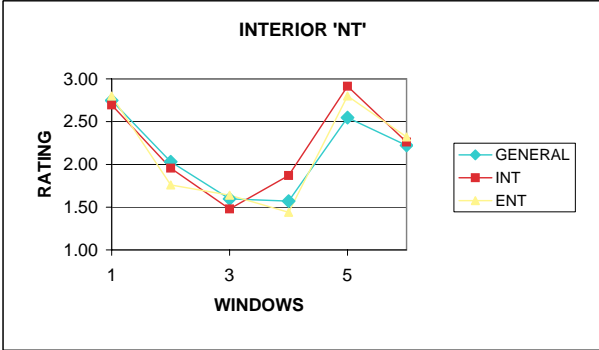
FAÇADE 'NF'

ENF'S ABOVE AVERAGE WHILE INF'S BELOW

FAÇADE 'SJ'

INTERIOR 'NF'

ENF'S ABOVE AVERAGE WHILE INF'S BELOW

INTERIOR 'NT'

FAÇADE 'SP'

FAÇADE 'NT'

INTERIOR 'SP'

INTERIOR 'SJ'
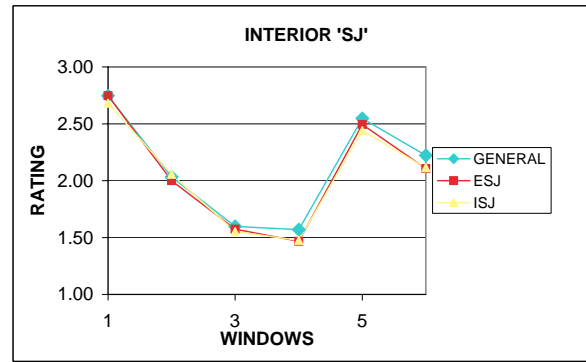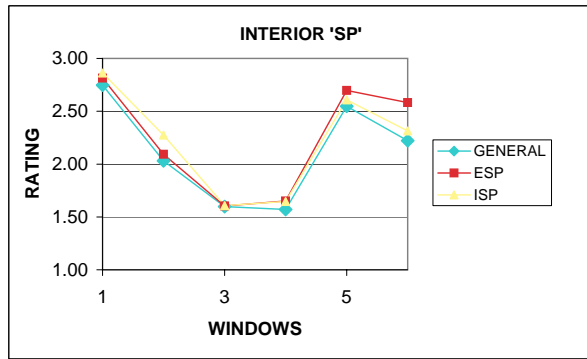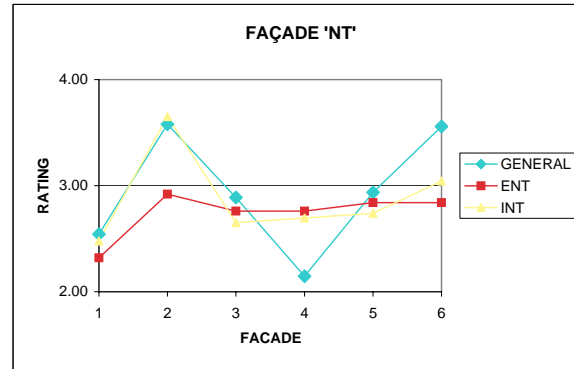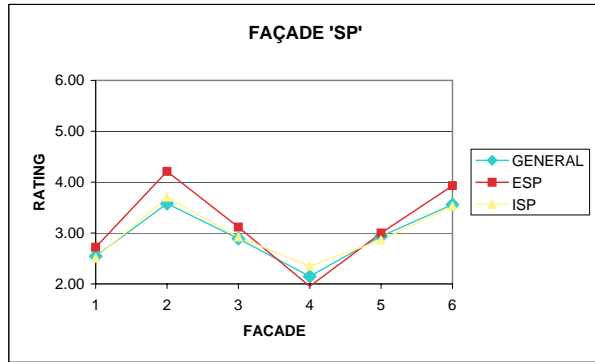
PLAN PREFERENCES						
	P1	P2	P3	P4	P5	P6
GENERAL	2.23	2.26	2.86	2.35	2.83	2.67
INFJ	2.21	2.28	2.62	2.26	2.56	2.50
ESFJ	2.04	2.48	3.00	2.74	2.44	2.93
ESTP	2.59	1.94	3.47	2.00	2.65	2.82
ISTJ	1.94	1.95	2.84	2.16	2.61	2.66
ENFP	2.26	2.55	2.65	2.45	3.23	2.90
ESFP	2.50	2.69	2.88	2.81	3.08	2.62
INTJ	2.70	2.60	3.00	3.00	2.10	2.70
INFP	2.43	2.29	2.95	2.43	3.14	2.52
INTP	2.38	2.69	3.46	1.92	3.31	2.08
ENFJ	2.19	3.06	2.63	2.25	2.44	2.81
ESTJ	2.19	2.02	2.90	2.08	2.56	2.44
ISFJ	2.25	2.33	3.00	2.48	3.14	2.89
ISTP	2.56	2.16	2.60	2.48	3.08	2.68
ISFP	2.00	1.92	2.31	2.42	2.77	2.54
ENTJ	2.00	2.18	2.91	2.27	3.09	2.27
ENTP	2.14	2.43	2.43	1.93	2.43	2.71

PLAN PREFERENCES							
	P1	P2	P3	P4	P5	P6	AVG
GENERAL	2.23	2.26	2.86	2.35	2.83	2.67	2.53
INT	2.52	2.65	3.26	2.39	2.78	2.35	2.66
ESP	2.53	2.40	3.12	2.49	2.91	2.70	2.69
ESJ	2.13	2.19	2.93	2.32	2.52	2.61	2.45
ISJ	2.08	2.12	2.91	2.30	2.85	2.77	2.51
ISP	2.27	2.04	2.45	2.45	2.92	2.61	2.46
ENF	2.08	2.32	2.64	2.08	2.72	2.52	2.39
INF	2.46	2.19	2.92	2.35	3.16	2.57	2.61
ENT	2.08	2.32	2.64	2.08	2.72	2.52	2.39

	BELOW AVG
	ABOVE AVG

FROM GRAPH
INT'S ENT'S SWITCH
ESP'S ISP'S SWITCH

PLANS EXX

PLANS IXX
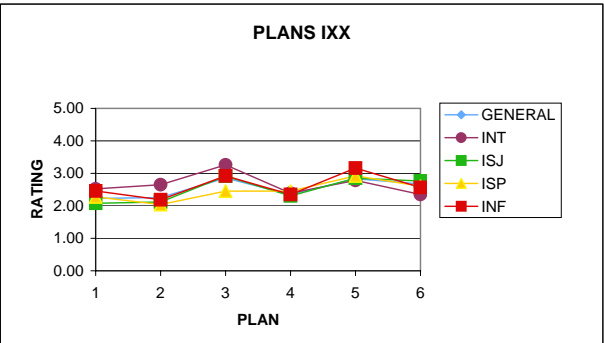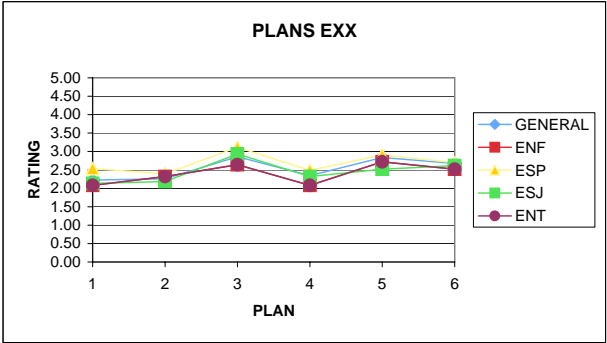
MOST VARIANCE ON MOST PREFERRED

PLAN 'NF'

Legend: INF, ENF, GENERAL

PLAN 'NT'

Legend: GENERAL, INT, ENT
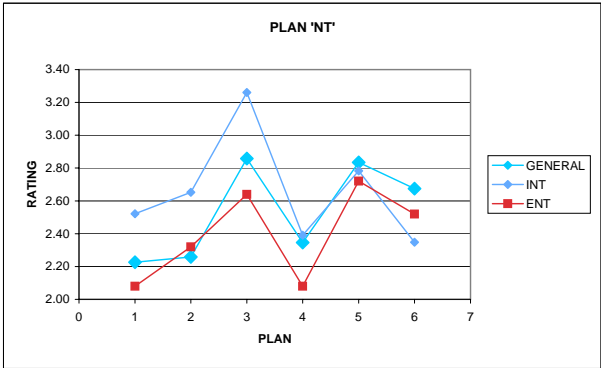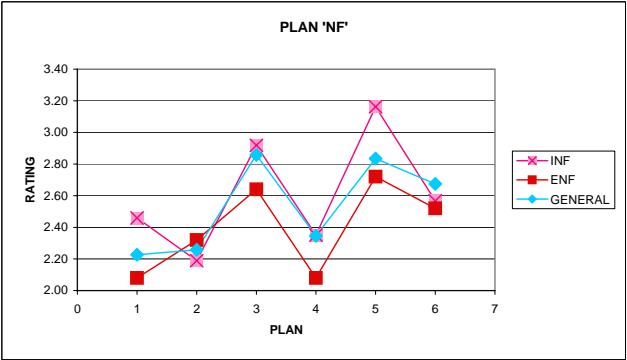
I'S LOWER THAN AVERAGE E'S HIGHER
INT'S ENT'S STRADDLE THE LINE
ISP'S, ESP'S STRADDLE THE LINE

PLANS IXX

Legend: GENERAL, ISP, ESP, INT, ENT

PLAN 'SP'

PLAN 'SJ'
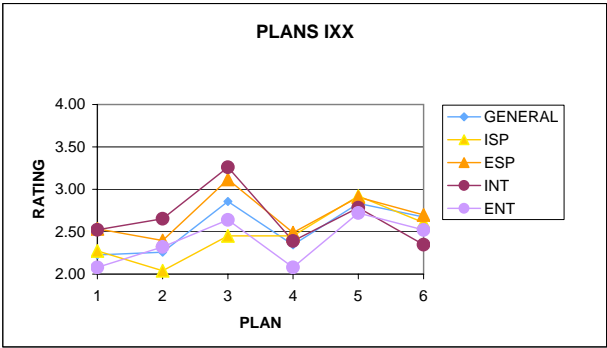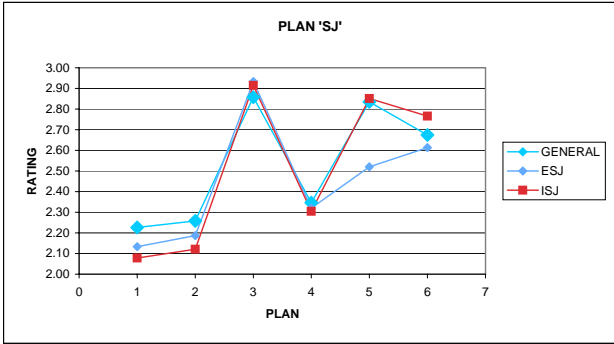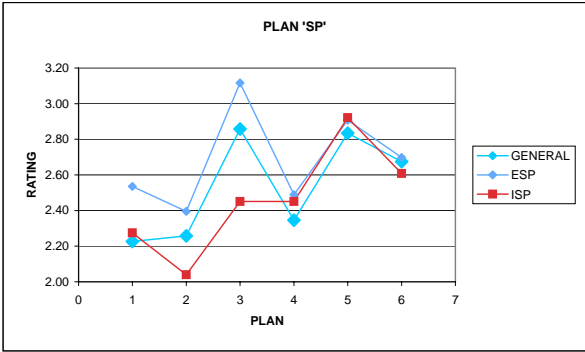
OVERALL PREFERENCE TENDANCY

	F	I	P	AVERAGE DEVIATION	SURVEY % TOTAL
GENERAL	2	1	3	0	
INFJ	2&6	1	3	MAYBE 1	4
ESFJ	6	1	3	1	6
ESTP	6	1	3	1	4
ISTJ	6	1	3	1	17
ESFP	2	1	5	1	6
INTP	2	5	3	1	3
INFP	2	1&5	3	1	5
INTJ	2&6	1	3&4	1 OR 2	2
ENFJ	2&6	1	2	1 OR 2	4
ENFP	2	5	5	2	7
ESTJ	6	1	5	2	11
ISFJ	6	1	5	2	14
ISTP	6	1	5	2	6
ISFP	2	5	5	2	6
ENTP	4	1	6	2	3
ENTJ	3	5	5	3	2

	F	I	P	AVERAGE DEVIATION	% TOTAL SAMPLE
GENERAL	2	1	3	0	100
ESP	2	1	3	0	10
INT	2	5	3	1	5
ESJ	6	1	3	1	17
ISJ	6	1	3	1	32
ISP	2	1	4	1	12
ENF	2	1	5	1	11
INF	2	1	4	1	6
ENT	2	5	5	2	6

		demographics							Meyers-Briggs			
		Design pro	Construction pro	Male	College	Shy	Age	Live USA	Extraversion /Intraversion	Sensing /Intuition	Thinking /Feeling	Judging/ Perceiving
Count	y	1	4	3	12	2		E	16		J	16
%		6%	25%	19%	75%	13%			100%			100%
Count	n	15	12	13	4	14		I	0		P	0
%		94%	75%	81%	25%	88%			0%			0%
		100%	100%	100%	100%	100%			100%			100%

ENFJ

u25	0	0%
o25	1	6%
o35	11	69%
o50	4	25%
	16	100%

S	0	
	0%	
N	16	
	100%	
	100%	

never	0	0%
five	0	0%
ten	0	0%
moreten	2	13%
life	14	88%
	16	100%

T	0	
	0%	
F	16	
	100%	
	100%	

		Design pro	Construction pro	Male	College	Shy		Live USA	Extraversion /Intraversion		Thinking /Feeling	Judging/ Perceiving
Count	y	2	3	6	21	2		E	31		J	0
%		6%	10%	19%	68%	6%			100%			0%
Count	n	29	28	25	10	29		I	0		P	31
%		94%	90%	81%	32%	94%			0%			100%
		100%	100%	100%	100%	100%			100%			100%

ENFP

u25	0	0%
o25	4	13%
o35	13	42%
o50	14	45%
	31	100%

S	0	
	0%	
N	31	
	100%	
	100%	

never	0	0%
five	0	0%
ten	1	3%
moreten	2	6%
life	28	90%
	31	100%

T	0	
	0%	
F	31	
	100%	
	100%	

Survey Results

Rating	F1	F2	F3	F4	F5	F6	I1	I2	I3	I4	I5	I6	P1	P2	P3	P4	P5
1	5	2	4	13	4	0	2	8	8	12	5	7	4	2	4	5	3
	31%	13%	25%	81%	25%	0%	13%	50%	50%	75%	31%	44%	25%	13%	25%	31%	19%
2	3	1	3	1	1	3	4	2	2	1	4	6	9	5	3	4	7
	19%	6%	19%	6%	6%	19%	25%	13%	13%	6%	25%	38%	56%	31%	19%	25%	44%
3	1	5	2	0	2	2	3	3	5	2	3	1	0	2	5	5	2
	6%	31%	13%	0%	13%	13%	19%	19%	31%	13%	19%	6%	0%	13%	31%	31%	13%
4	5	2	3	2	5	6	5	3	1	1	4	2	2	4	3	2	4
	31%	13%	19%	13%	31%	38%	31%	19%	6%	6%	25%	13%	13%	25%	19%	13%	25%
5	2	6	4	0	4	5	2	0	0	0	0	0	1	3	1	0	0
	13%	38%	25%	0%	25%	31%	13%	0%	0%	0%	0%	0%	6%	19%	6%	0%	0%
	16						SAME										
Average	2.75	3.56	3.00	1.44	3.25	3.81	3.06	2.06	1.94	1.50	2.38	1.88	2.19	3.06	2.63	2.25	2.4
Std Dev	1.53	1.41	1.59	1.03	1.57	1.11	1.29	1.24	1.06	0.97	1.20	1.02	1.17	1.39	1.26	1.06	1.0
95% CI	0.748	0.692	0.78	0.505	0.77	0.543	0.632	0.606	0.521	0.473	0.59	0.502	0.572	0.681	0.617	0.522	0.53
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100

Rating	F1	F2	F3	F4	F5	F6	I1	I2	I3	I4	I5	I6	P1	P2	P3	P4	P5
1	6	2	6	9	2	3	6	16	20	15	4	7	8	8	7	8	3
	19%	6%	19%	29%	6%	10%	19%	52%	65%	48%	13%	23%	26%	26%	23%	26%	10%
2	9	4	8	12	12	5	7	9	2	4	8	3	13	10	8	10	6
	29%	13%	26%	39%	39%	16%	23%	29%	6%	13%	26%	10%	42%	32%	26%	32%	19%
3	3	3	2	3	5	4	6	4	8	9	10	14	6	4	5	4	8
	10%	10%	6%	10%	16%	13%	19%	13%	26%	29%	32%	45%	19%	13%	16%	13%	26%
4	6	6	8	2	5	6	11	2	1	3	6	5	2	6	11	9	9
	19%	19%	26%	6%	16%	19%	35%	6%	3%	10%	19%	16%	6%	19%	35%	29%	29%
5	7	16	7	5	7	13	1	0	0	0	3	2	2	3	0	0	5
	23%	52%	23%	16%	23%	42%	3%	0%	0%	0%	10%	6%	6%	10%	0%	0%	16%
	31						ci DIFFERENT										
Average	2.97	3.97	3.06	2.42	3.10	3.68	2.81	1.74	1.68	2.00	2.87	2.74	2.26	2.55	2.65	2.45	3.2
Std Dev	1.49	1.33	1.50	1.41	1.33	1.42	1.22	0.93	0.98	1.10	1.18	1.18	1.12	1.34	1.20	1.18	1.2
95% CI	0.526	0.468	0.529	0.496	0.467	0.501	0.43	0.327	0.345	0.386	0.414	0.416	0.396	0.471	0.422	0.415	0.43
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100

ENTJ

		demographics							Meyers-Briggs			
		Design pro	Construction pro	Male	College	Shy	Age	Live USA	Extraversion /Intraversion	Sensing /Intuition	Thinking /Feeling	Judging/ Perceiving
Count	y	1	2	3	9	0		E	11		J	11
%		9%	18%	27%	82%	0%			100%			100%
Count	n	10	9	8	2	11		I	0		P	0
%		91%	82%	73%	18%	100%			0%			0%
		100%	100%	100%	100%	100%			100%			100%

u25	0	0%
o25	2	18%
o35	5	45%
o50	4	36%
	11	100%

never	0	0%
five	0	0%
ten	0	0%
moreten	3	27%
life	8	73%
	11	100%

S	0	
	0%	
N	11	
	100%	
	100%	

T	11	
	100%	
F	0	
	0%	
	100%	

ENTP

		Design pro	Construction pro	Male	College	Shy	Age	Live USA	Extraversion /Intraversion	Sensing /Intuition	Thinking /Feeling	Judging/ Perceiving
Count	y	3	1	7	11	0		E	14		J	0
%		21%	7%	50%	79%	0%			100%			0%
Count	n	11	13	7	3	14		I	0		P	14
%		79%	93%	50%	21%	100%			0%			100%
		100%	100%	100%	100%	100%			100%			100%

u25	0	0%
o25	1	7%
o35	4	29%
o50	9	64%
	14	100%

never	0	0%
five	0	0%
ten	1	7%
moreten	2	14%
life	11	79%
	14	100%

S	0	
	0%	
N	14	
	100%	
	100%	

T	14	
	100%	
F	0	
	0%	
	100%	

Survey Results

Rating	F1	F2	F3	F4	F5	F6	I1	I2	I3	I4	I5	I6	P1	P2	P3	P4	P5
1	3	3	2	3	1	1	1	6	7	7	0	4	5	6	1	2	2
	27%	27%	18%	27%	9%	9%	9%	55%	64%	64%	0%	36%	45%	55%	9%	18%	18%
2	5	2	1	4	4	4	3	3	3	3	3	2	2	1	5	6	1
	45%	18%	9%	36%	36%	36%	27%	27%	27%	27%	27%	18%	18%	9%	45%	55%	9%
3	1	2	2	1	1	2	4	2	1	1	5	2	3	1	0	1	2
	9%	18%	18%	9%	9%	18%	36%	18%	9%	9%	45%	18%	27%	9%	0%	9%	18%
4	1	2	4	3	3	1	2	0	0	0	2	1	1	2	4	2	6
	9%	18%	36%	27%	27%	9%	18%	0%	0%	0%	18%	9%	9%	18%	36%	18%	55%
5	1	2	2	0	2	3	1	0	0	0	1	2	0	1	1	0	0
	9%	18%	18%	0%	18%	27%	9%	0%	0%	0%	9%	18%	0%	9%	9%	0%	0%
11							SAME										
Average	2.27	2.82	3.27	2.36	3.09	3.09	2.91	1.64	1.45	1.45	3.09	2.55	2.00	2.18	2.91	2.27	3.0
Std Dev	1.27	1.54	1.42	1.21	1.38	1.45	1.14	0.81	0.69	0.69	0.94	1.57	1.10	1.54	1.30	1.01	1.2
95% CI	0.752	0.909	0.84	0.713	0.813	0.855	0.671	0.478	0.406	0.406	0.558	0.929	0.647	0.909	0.768	0.596	0.72
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100
1	5	2	4	1	3	4	3	8	7	10	2	5	4	3	1	6	5
	36%	14%	29%	7%	21%	29%	21%	57%	50%	71%	14%	36%	29%	21%	7%	43%	36%
2	5	4	4	7	4	3	3	3	4	3	6	5	6	6	9	3	3
	36%	29%	29%	50%	29%	21%	21%	21%	29%	21%	43%	36%	43%	43%	64%	21%	21%
3	0	3	4	1	3	3	4	1	2	0	3	1	2	2	2	5	2
	0%	21%	29%	7%	21%	21%	29%	7%	14%	0%	21%	7%	14%	14%	14%	36%	14%
4	2	2	1	0	3	2	3	1	1	1	2	3	2	2	1	0	3
	14%	14%	7%	0%	21%	14%	21%	7%	7%	7%	14%	21%	14%	14%	7%	0%	21%
5	2	3	1	5	1	2	1	1	0	0	1	0	0	1	1	0	1
	14%	21%	7%	36%	7%	14%	7%	7%	0%	0%	7%	0%	0%	7%	7%	0%	7%
14							DIFFERENT										
Average	2.36	3.00	2.36	3.07	2.64	2.64	2.71	1.86	1.79	1.43	2.57	2.14	2.14	2.43	2.43	1.93	2.4
Std Dev	1.50	1.41	1.22	1.54	1.28	1.45	1.27	1.29	0.97	0.85	1.16	1.17	1.03	1.22	1.02	0.92	1.4
95% CI	0.785	0.741	0.637	0.808	0.669	0.758	0.663	0.677	0.511	0.446	0.607	0.611	0.538	0.64	0.532	0.48	0.73
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100

		demographics						Meyers-Briggs			
		Design pro	Construction pro	Male	College	Shy	Age	Live USA	Extraversion /Intraversion	Sensing /Intuition	Thinking /Feeling	Judging/ Perceiving

ESFJ

		Design pro	Construction pro	Male	College	Shy	Live USA	Extraversion/Intraversion	Thinking/Feeling	Judging/Perceiving
Count	y	0	4	4	20	0	E	27	J	27
%		0%	15%	15%	74%	0%		100%		100%
Count	n	27	23	23	7	27	I	0	P	0
%		100%	85%	85%	26%	100%		0%		0%
		100%	100%	100%	100%	100%		100%		100%

Age		
u25	0	0%
o25	6	22%
o35	10	37%
o50	11	41%
	27	100%

never	0	0%
five	0	0%
ten	0	0%
moreten	2	7%
life	25	93%
	27	100%

Sensing/Intuition		
S	27	
	100%	
N	0	
	0%	
	100%	

Thinking/Feeling		
T	0	
	0%	
F	27	
	100%	
	100%	

ESFP

		Design pro	Construction pro	Male	College	Shy	Live USA	Extraversion/Intraversion	Judging/Perceiving
Count	y	1	8	4	15	0	E	26	J	0
%		4%	31%	15%	58%	0%		100%	0%
Count	n	25	18	22	11	26	I	0	P	26
%		96%	69%	85%	42%	100%		0%	100%
		100%	100%	100%	100%	100%		100%	100%

Age		
u25	1	4%
o25	7	27%
o35	11	42%
o50	7	27%
	26	100%

never	0	0%
five	0	0%
ten	0	0%
moreten	0	0%
life	26	100%
	26	100%

Sensing/Intuition		
S	26	
	100%	
N	0	
	0%	
	100%	

Thinking/Feeling		
T	0	
	0%	
F	26	
	100%	
	100%	

Survey Results

Rating	F1	F2	F3	F4	F5	F6	I1	I2	I3	I4	I5	I6	P1	P2	P3	P4	P5
1	8	1	2	12	2	1	6	13	15	16	8	11	11	10	6	4	11
	30%	4%	7%	44%	7%	4%	22%	48%	56%	59%	30%	41%	41%	37%	22%	15%	41%
2	10	2	10	10	8	4	6	3	1	4	6	4	9	4	4	9	6
	37%	7%	37%	37%	30%	15%	22%	11%	4%	15%	22%	15%	33%	15%	15%	33%	22%
3	1	7	5	1	6	3	6	9	10	7	8	12	2	4	4	6	0
	4%	26%	19%	4%	22%	11%	22%	33%	37%	26%	30%	44%	7%	15%	15%	22%	0%
4	6	8	7	3	6	7	6	1	1	0	4	0	5	8	10	6	7
	22%	30%	26%	11%	22%	26%	22%	4%	4%	0%	15%	0%	19%	30%	37%	22%	26%
5	2	9	3	1	5	12	3	1	0	0	1	0	0	1	3	2	3
	7%	33%	11%	4%	19%	44%	11%	4%	0%	0%	4%	0%	0%	4%	11%	7%	11%
	27						SAME										
Average	2.41	3.81	2.96	1.93	3.15	3.93	2.78	2.04	1.89	1.67	2.41	2.04	2.04	2.48	3.00	2.74	2.4
Std Dev	1.34	1.11	1.19	1.14	1.26	1.24	1.34	1.16	1.05	0.88	1.19	0.94	1.13	1.37	1.39	1.20	1.5
95% CI	0.505	0.419	0.45	0.43	0.476	0.467	0.505	0.437	0.396	0.331	0.447	0.354	0.425	0.516	0.523	0.451	0.57
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100

Rating	F1	F2	F3	F4	F5	F6	I1	I2	I3	I4	I5	I6	P1	P2	P3	P4	P5
1	6	0	3	13	3	1	2	10	15	15	2	5	5	3	5	3	3
	23%	0%	12%	50%	12%	4%	8%	38%	58%	58%	8%	19%	19%	12%	19%	12%	12%
2	8	1	6	7	9	6	10	7	8	4	11	7	10	11	4	9	8
	31%	4%	23%	27%	35%	23%	38%	27%	31%	15%	42%	27%	38%	42%	15%	35%	31%
3	4	6	6	4	9	3	7	5	2	5	6	9	4	4	7	5	3
	15%	23%	23%	15%	35%	12%	27%	19%	8%	19%	23%	35%	15%	15%	27%	19%	12%
4	4	4	5	2	3	4	5	3	1	2	5	2	7	7	9	8	8
	15%	15%	19%	8%	12%	15%	19%	12%	4%	8%	19%	8%	27%	27%	35%	31%	31%
5	4	15	6	0	2	12	2	1	0	0	2	3	0	1	1	1	4
	15%	58%	23%	0%	8%	46%	8%	4%	0%	0%	8%	12%	0%	4%	4%	4%	15%
	26																
Average	2.69	4.27	3.19	1.81	2.69	3.77	2.81	2.15	1.58	1.77	2.77	2.65	2.50	2.69	2.88	2.81	3.0
Std Dev	1.41	0.96	1.36	0.98	1.09	1.37	1.10	1.19	0.81	1.03	1.11	1.23	1.10	1.12	1.21	1.13	1.3
95% CI	0.541	0.37	0.522	0.377	0.418	0.525	0.421	0.457	0.311	0.397	0.425	0.473	0.425	0.432	0.465	0.435	0.50
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100

		demographics							Meyers-Briggs			
		Design pro	Construction pro	Male	College	Shy	Age	Live USA	Extraversion /Intraversion	Sensing /Intuition	Thinking /Feeling	Judging/ Perceiving
Count	y	3	11	17	35	3		E	48		J	48
%		6%	23%	35%	73%	6%			100%			100%
Count	n	45	37	31	13	45		I	0		P	0
%		94%	77%	65%	27%	94%			0%			0%
		100%	100%	100%	100%	100%			100%			100%

ESTJ

u25	3	6%	
o25	9	19%	
o35	19	40%	
o50	17	35%	
	48	100%	

S	48	
	100%	
N	0	
	0%	
	100%	

never	0	0%
five	0	0%
ten	0	0%
moreten	3	6%
life	45	94%
	48	100%

T	48	
	100%	
F	0	
	0%	
	100%	

		demographics							Meyers-Briggs			
Count	y	0	5	5	13	1		E	17		J	0
%		0%	29%	29%	76%	6%			100%			0%
Count	n	17	12	12	4	16		I	0		P	17
%		100%	71%	71%	24%	94%			0%			100%
		100%	100%	100%	100%	100%			100%			100%

ESTP

u25	1	6%	
o25	1	6%	
o35	7	41%	
o50	8	47%	
	17	100%	

S	17	
	100%	
N	0	
	0%	
	100%	

never	0	0%
five	0	0%
ten	0	0%
moreten	4	24%
life	13	76%
	17	100%

T	17	
	100%	
F	0	
	0%	
	100%	

Survey Results

Rating	F1	F2	F3	F4	F5	F6	I1	I2	I3	I4	I5	I6	P1	P2	P3	P4	P5
1	13	5	11	21	8	6	13	21	36	37	11	19	18	19	13	14	13
	27%	10%	23%	44%	17%	13%	27%	44%	75%	77%	23%	40%	38%	40%	27%	29%	27%
2	19	13	6	11	18	7	4	10	6	5	10	7	14	14	7	21	15
	40%	27%	13%	23%	38%	15%	8%	21%	13%	10%	21%	15%	29%	29%	15%	44%	31%
3	3	9	8	3	4	4	16	14	5	6	18	18	7	10	4	9	6
	6%	19%	17%	6%	8%	8%	33%	29%	10%	13%	38%	38%	15%	21%	8%	19%	13%
4	4	5	11	5	10	13	13	3	1	0	8	4	7	5	20	3	8
	8%	10%	23%	10%	21%	27%	27%	6%	2%	0%	17%	8%	15%	10%	42%	6%	17%
5	9	16	12	8	8	18	2	0	0	0	1	0	2	0	4	1	6
	19%	33%	25%	17%	17%	38%	4%	0%	0%	0%	2%	0%	4%	0%	8%	2%	13%
48							SAME										
Average	2.52	3.29	3.15	2.33	2.83	3.63	2.73	1.98	1.40	1.35	2.54	2.15	2.19	2.02	2.90	2.08	2.5
Std Dev	1.46	1.44	1.52	1.53	1.39	1.44	1.25	1.00	0.76	0.70	1.09	1.05	1.21	1.02	1.42	0.96	1.3
95% CI	0.413	0.408	0.429	0.434	0.393	0.407	0.354	0.283	0.216	0.198	0.309	0.298	0.344	0.289	0.401	0.273	0.39
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
1	3	1	3	8	1	0	1	7	12	13	4	5	6	8	1	6	5
	18%	6%	18%	47%	6%	0%	6%	41%	71%	76%	24%	29%	35%	47%	6%	35%	29%
2	6	2	5	2	4	3	8	5	1	2	4	3	3	5	3	7	4
	35%	12%	29%	12%	24%	18%	47%	29%	6%	12%	24%	18%	18%	29%	18%	41%	24%
3	3	1	2	4	4	1	3	3	2	0	4	5	2	2	2	2	2
	18%	6%	12%	24%	24%	6%	18%	18%	12%	0%	24%	29%	12%	12%	12%	12%	12%
4	2	3	3	2	2	3	3	2	2	2	5	4	4	1	9	2	4
	12%	18%	18%	12%	12%	18%	18%	12%	12%	12%	29%	24%	24%	6%	53%	12%	24%
5	3	10	4	1	6	10	2	0	0	0	0	0	2	1	2	0	2
	18%	59%	24%	6%	35%	59%	12%	0%	0%	0%	0%	0%	12%	6%	12%	0%	12%
17							DIFFERENT										
Average	2.76	4.12	3.00	2.18	3.47	4.18	2.82	2.00	1.65	1.47	2.59	2.47	2.59	1.94	3.47	2.00	2.6
Std Dev	1.39	1.32	1.50	1.33	1.37	1.19	1.19	1.06	1.11	1.01	1.18	1.18	1.50	1.20	1.12	1.00	1.4
95% CI	0.662	0.626	0.713	0.634	0.653	0.563	0.563	0.504	0.53	0.479	0.559	0.56	0.714	0.569	0.535	0.475	0.69
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

		demographics							Meyers-Briggs			
		Design pro	Construction pro	Male	College	Shy	Age	Live USA	Extraversion /Intraversion	Sensing /Intuition	Thinking /Feeling	Judging/ Perceiving
Count	y	3	2	4	13	6		E	0		J	16
%		19%	13%	25%	81%	38%			0%			100%
Count	n	13	14	12	3	10		I	16		P	0
%		81%	88%	75%	19%	63%			100%			0%
		100%	100%	100%	100%	100%			100%			100%

INFJ

u25	2	13%
o25	2	13%
o35	3	19%
o50	9	56%
	16	100%

never	0	0%
five	0	0%
ten	0	0%
moreten	0	0%
life	16	100%
	16	100%

S	0	
	0%	
N	16	
	100%	
	100%	

T	0	
	0%	
F	16	
	100%	
	100%	

Count	y	2	1	10	11	12		E	0		J	0
%		10%	5%	48%	52%	57%			0%			0%
Count	n	19	20	11	10	9		I	21		P	21
%		90%	95%	52%	48%	43%			100%			100%
		100%	100%	100%	100%	100%			100%			100%

INFP

u25	1	5%
o25	2	10%
o35	8	38%
o50	10	48%
	21	100%

never	0	0%
five	0	0%
ten	0	0%
moreten	3	14%
life	18	86%
	21	100%

S	0	
	0%	
N	21	
	100%	
	100%	

T	0	
	0%	
F	21	
	100%	
	100%	

Survey Results

Rating	F1	F2	F3	F4	F5	F6	I1	I2	I3	I4	I5	I6	P1	P2	P3	P4	P5
1	5	3	4	7	3	2	5	10	10	13	11	11	4	7	2	5	3
	31%	19%	25%	44%	19%	13%	31%	63%	63%	81%	69%	69%	25%	44%	13%	31%	19%
2	6	2	4	3	8	6	2	1	1	1	0	0	6	5	5	5	2
	38%	13%	25%	19%	50%	38%	13%	6%	6%	6%	0%	0%	38%	31%	31%	31%	13%
3	2	3	3	3	4	1	6	5	5	1	4	2	1	1	3	3	3
	13%	19%	19%	19%	25%	6%	38%	31%	31%	6%	25%	13%	6%	6%	19%	19%	19%
4	1	1	3	3	0	1	2	0	0	1	1	2	4	2	5	3	5
	6%	6%	19%	19%	0%	6%	13%	0%	0%	6%	6%	13%	25%	13%	31%	19%	31%
5	2	7	2	0	1	6	1	0	0	0	0	1	1	1	1	0	3
	13%	44%	13%	0%	6%	38%	6%	0%	0%	0%	0%	6%	6%	6%	6%	0%	19%
16							SAME										
Average	2.31	3.14	2.72	2.16	2.67	3.13	2.56	1.99	1.79	1.74	2.41	2.23	2.21	2.28	2.62	2.26	2.5
Std Dev	1.35	2.33	1.98	2.33	2.05	2.28	2.03	2.28	2.85	2.87	2.02	2.24	2.13	2.13	2.16	2.13	2.0
95% CI	0.663	1.14	0.972	1.141	1.005	1.119	0.994	1.115	1.398	1.406	0.987	1.095	1.044	1.044	1.058	1.042	1.00
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
1	6	1	6	8	3	0	6	4	13	14	5	10	4	8	3	2	4
	29%	5%	29%	38%	14%	0%	29%	19%	62%	67%	24%	48%	19%	38%	14%	10%	19%
2	4	3	7	7	2	7	3	7	4	3	4	4	9	5	5	10	3
	19%	14%	33%	33%	10%	33%	14%	33%	19%	14%	19%	19%	43%	24%	24%	48%	14%
3	4	6	2	2	6	4	6	9	4	2	6	4	3	4	5	7	3
	19%	29%	10%	10%	29%	19%	29%	43%	19%	10%	29%	19%	14%	19%	24%	33%	14%
4	0	4	5	2	5	3	5	1	0	2	6	3	5	2	6	2	8
	0%	19%	24%	10%	24%	14%	24%	5%	0%	10%	29%	14%	24%	10%	29%	10%	38%
5	7	7	1	2	5	7	1	0	0	0	0	0	0	2	2	0	3
	33%	33%	5%	10%	24%	33%	5%	0%	0%	0%	0%	0%	0%	10%	10%	0%	14%
21							DIFFERENT										
Average	2.90	3.62	2.43	2.19	3.33	3.48	2.62	2.33	1.57	1.62	2.62	2.00	2.43	2.29	2.95	2.43	3.1
Std Dev	1.67	1.24	1.29	1.33	1.35	1.29	1.28	0.86	0.81	1.02	1.16	1.14	1.08	1.35	1.24	0.81	1.3
95% CI	0.714	0.532	0.551	0.568	0.579	0.551	0.549	0.366	0.347	0.438	0.497	0.488	0.46	0.576	0.532	0.347	0.59
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

		demographics							Meyers-Briggs			
		Design pro	Construction pro	Male	College	Shy	Age	Live USA	Extraversion /Intraversion	Sensing /Intuition	Thinking /Feeling	Judging/ Perceiving
%	y	0%	20%	60%	60%	70%		E	0%		J	100%
Count	n	10	8	4	4	3		I	10		P	0
%		100%	80%	40%	40%	30%			100%			0%
		100%	100%	100%	100%	100%			100%			100%

INTJ

u25	1	10%
o25	3	30%
o35	2	20%
o50	4	40%
	10	100%

S	0	
	0%	
N	10	
	100%	
	100%	

never	1	10%
five	1	10%
ten	0	0%
moreten	1	10%
life	7	70%
	10	100%

T	10	
	100%	
F	0	
	0%	
	100%	

Count	y	2	6	10	10	4		E	0		J	0
%		15%	46%	77%	77%	31%			0%			0%
Count	n	11	7	3	3	9		I	13		P	13
%		85%	54%	23%	23%	69%			100%			100%
		100%	100%	100%	100%	100%			100%			100%

INTP

u25	0	0%
o25	1	8%
o35	5	38%
o50	6	46%
	12	92%

S	0	
	0%	
N	13	
	100%	
	100%	

never	0	0%
five	0	0%
ten	0	0%
moreten	1	8%
life	11	85%
	12	92%

T	13	
	100%	
F	0	
	0%	
	100%	

Survey Results

Rating	F1	F2	F3	F4	F5	F6	I1	I2	I3	I4	I5	I6	P1	P2	P3	P4	P5
1	40%	20%	30%	50%	10%	20%	40%	40%	70%	80%	30%	30%	20%	20%	0%	0%	30%
2	3	1	2	1	4	1	0	2	1	1	2	2	3	4	4	4	5
	30%	10%	20%	10%	40%	10%	0%	20%	10%	10%	20%	20%	30%	40%	40%	40%	50%
3	1	2	1	2	2	2	2	3	2	0	2	3	1	0	3	2	1
	10%	20%	10%	20%	20%	20%	20%	30%	20%	0%	20%	30%	10%	0%	30%	20%	10%
4	1	3	3	2	1	3	2	1	0	0	3	2	4	4	2	4	0
	10%	30%	30%	20%	10%	30%	20%	10%	0%	0%	30%	20%	40%	40%	20%	40%	0%
5	1	2	1	0	2	2	2	0	0	1	0	0	0	0	1	0	1
	10%	20%	10%	0%	20%	20%	20%	0%	0%	10%	0%	0%	0%	0%	10%	0%	10%
	10						SAME										
Average	2.20	3.20	2.70	2.10	2.90	3.20	2.80	2.10	1.50	1.50	2.50	2.40	2.70	2.60	3.00	3.00	2.1
Std Dev	1.40	1.48	1.49	1.29	1.37	1.48	1.69	1.10	0.85	1.27	1.27	1.17	1.25	1.26	1.05	0.94	1.2
95% CI	0.867	0.915	0.926	0.797	0.849	0.915	1.045	0.682	0.527	0.787	0.787	0.728	0.776	0.784	0.653	0.584	0.74
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100

Rating	F1	F2	F3	F4	F5	F6	I1	I2	I3	I4	I5	I6	P1	P2	P3	P4	P5
1	2	0	5	3	1	2	2	7	9	6	2	7	4	3	1	6	1
	15%	0%	38%	23%	8%	15%	15%	54%	69%	46%	15%	54%	31%	23%	8%	46%	8%
2	5	1	2	2	5	4	4	2	2	1	0	0	4	3	3	3	3
	38%	8%	15%	15%	38%	31%	31%	15%	15%	8%	0%	0%	31%	23%	23%	23%	23%
3	3	3	1	2	5	1	4	3	2	5	5	4	1	3	0	3	2
	23%	23%	8%	15%	38%	8%	31%	23%	15%	38%	38%	31%	8%	23%	0%	23%	15%
4	1	4	3	2	2	5	3	1	0	0	5	1	4	3	7	1	5
	8%	31%	23%	15%	15%	38%	23%	8%	0%	0%	38%	8%	31%	23%	54%	8%	38%
5	2	5	2	4	0	1	0	0	0	1	1	1	0	1	2	0	2
	15%	38%	15%	31%	0%	8%	0%	0%	0%	8%	8%	8%	0%	8%	15%	0%	15%
	13						SAME										
Average	2.69	4.00	2.62	3.15	2.62	2.92	2.62	1.85	1.46	2.15	3.23	2.15	2.38	2.69	3.46	1.92	3.3
Std Dev	1.32	1.00	1.61	1.63	0.87	1.32	1.04	1.07	0.78	1.28	1.17	1.41	1.26	1.32	1.27	1.04	1.2
95% CI	0.715	0.544	0.875	0.883	0.473	0.718	0.567	0.581	0.422	0.696	0.634	0.764	0.685	0.715	0.688	0.564	0.6
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100

		demographics							Meyers-Briggs			
		Design pro	Construction pro	Male	College	Shy	Age	Live USA	Extraversion /Intraversion	Sensing /Intuition	Thinking /Feeling	Judging/ Perceiving
Count	y	2	16	11	41	24		E	0		J	64
%		3%	25%	17%	64%	38%			0%			100%
Count	n	62	48	53	23	40		I	64		P	0
%		97%	75%	83%	36%	63%			100%			0%
		100%	100%	100%	100%	100%			100%			100%

ISFJ

u25	1	2%		S	64
o25	6	9%			100%
o35	21	33%		N	0
o50	36	56%			0%
	64	100%			100%

never	0	0%		T	0
five	0	0%			0%
ten	0	0%		F	64
moreten	3	5%			100%
life	61	95%			100%
	64	100%			

		demographics							Meyers-Briggs			
Count	y	0	3	8	16	12		E	0		J	0
%		0%	12%	31%	62%	46%			0%			0%
Count	n	26	23	18	10	14		I	26		P	26
%		100%	88%	69%	38%	54%			100%			100%
		100%	100%	100%	100%	100%			100%			100%

ISFP

u25	2	8%		S	26
o25	1	4%			100%
o35	9	35%		N	0
o50	14	54%			0%
	26	100%			100%

never	0	0%		T	0
five	0	0%			0%
ten	0	0%		F	26
moreten	1	4%			100%
life	25	96%			100%
	26	100%			

Survey Results

Rating	F1	F2	F3	F4	F5	F6	I1	I2	I3	I4	I5	I6	P1	P2	P3	P4	P5
1	17	3	15	33	9	3	16	32	45	47	23	28	22	20	10	15	6
	27%	5%	23%	52%	14%	5%	25%	50%	70%	73%	36%	44%	34%	31%	16%	23%	9%
2	24	11	16	16	18	7	16	11	8	9	15	11	20	22	15	20	18
	38%	17%	25%	25%	28%	11%	25%	17%	13%	14%	23%	17%	31%	34%	23%	31%	28%
3	3	14	6	6	8	10	17	16	11	8	19	21	7	5	9	14	6
	5%	22%	9%	9%	13%	16%	27%	25%	17%	13%	30%	33%	11%	8%	14%	22%	9%
4	10	16	16	6	15	16	15	4	0	0	6	4	14	15	25	13	29
	16%	25%	25%	9%	23%	25%	23%	6%	0%	0%	9%	6%	22%	23%	39%	20%	45%
5	10	20	11	3	14	28	0	1	0	0	1	0	1	2	5	2	5
	16%	31%	17%	5%	22%	44%	0%	2%	0%	0%	2%	0%	2%	3%	8%	3%	8%
	64																
Average	2.56	3.61	2.88	1.91	3.11	3.92	2.48	1.92	1.47	1.39	2.17	2.02	2.25	2.33	3.00	2.48	3.1
Std Dev	1.44	1.23	1.46	1.19	1.40	1.21	1.11	1.07	0.78	0.70	1.08	1.02	1.20	1.24	1.26	1.15	1.1
95% CI	0.352	0.301	0.359	0.292	0.344	0.297	0.273	0.263	0.19	0.173	0.264	0.249	0.293	0.303	0.309	0.283	0.29
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
1	6	0	5	13	4	2	7	9	22	20	2	8	8	12	8	6	4
	23%	0%	19%	50%	15%	8%	27%	35%	85%	77%	8%	31%	31%	46%	31%	23%	15%
2	10	5	6	6	7	7	8	6	2	2	9	11	14	6	7	9	8
	38%	19%	23%	23%	27%	27%	31%	23%	8%	8%	35%	42%	54%	23%	27%	35%	31%
3	2	5	2	3	6	5	2	6	2	3	9	6	1	6	7	6	6
	8%	19%	8%	12%	23%	19%	8%	23%	8%	12%	35%	23%	4%	23%	27%	23%	23%
4	6	9	9	3	5	7	7	4	0	1	6	1	2	2	3	4	6
	23%	35%	35%	12%	19%	27%	27%	15%	0%	4%	23%	4%	8%	8%	12%	15%	23%
5	2	7	4	1	4	5	2	1	0	0	0	0	1	0	1	1	2
	8%	27%	15%	4%	15%	19%	8%	4%	0%	0%	0%	0%	4%	0%	4%	4%	8%
	26						SAME										
Average	2.54	3.69	3.04	1.96	2.92	3.23	2.58	2.31	1.23	1.42	2.73	2.00	2.00	1.92	2.31	2.42	2.7
Std Dev	1.30	1.09	1.43	1.22	1.32	1.27	1.36	1.23	0.59	0.86	0.92	0.85	1.02	1.02	1.16	1.14	1.2
95% CI	0.501	0.418	0.549	0.467	0.509	0.49	0.523	0.471	0.226	0.329	0.353	0.326	0.392	0.391	0.445	0.437	0.46
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

		demographics							Meyers-Briggs			
		Design pro	Construction pro	Male	College	Shy	Age	Live USA	Extraversion /Intraversion	Sensing /Intuition	Thinking /Feeling	Judging/ Perceiving
Count	y	4	7	32	60	33		E	0		J	77
%		5%	9%	42%	78%	43%			0%			100%
Count	n	73	70	45	17	44		I	77		P	0
%		95%	91%	58%	22%	57%			100%			0%
		100%	100%	100%	100%	100%			100%			100%

ISTJ

u25	4	5%
o25	29	38%
o35	67	87%
o50	61	79%
	161	209%

S	77	
	100%	
N	0	
	0%	
	100%	

never	0	0.0%
five	0	0.0%
ten	2	3%
moreten	13	17%
life	146	190%
	161	209%

T	77	
	100%	
F	0	
	0%	
	100%	

Count	y	2	1	14	16	8		E	0		J	0
%		8%	4%	56%	64%	32%			0%			0%
Count	n	23	24	11	9	17		I	25		P	25
%		92%	96%	44%	36%	68%			100%			100%
		100%	100%	100%	100%	100%			100%			100%

ISTP

u25	1	4%
o25	5	20%
o35	8	32%
o50	11	44%
	25	100%

S	25	
	100%	
N	0	
	0%	
	100%	

never	0	0%
five	0	0%
ten	0	0%
moreten	3	12.0%
life	22	88%
	25	100%

T	25	
	100%	
F	0	
	0%	
	100%	

Survey Results

Rating	F1	F2	F3	F4	F5	F6	I1	I2	I3	I4	I5	I6	P1	P2	P3	P4	P5
1	20	8	17	34	13	8	13	32	48	54	15	25	35	33	15	21	22
	26%	10%	22%	44%	17%	10%	17%	42%	62%	70%	19%	32%	45%	43%	19%	27%	29%
2	35	17	22	27	26	20	14	15	12	7	18	25	24	26	18	32	19
	45%	22%	29%	35%	34%	26%	18%	19%	16%	9%	23%	32%	31%	34%	23%	42%	25%
3	3	17	10	6	12	13	29	19	15	13	25	17	7	7	13	16	10
	4%	22%	13%	8%	16%	17%	38%	25%	19%	17%	32%	22%	9%	9%	17%	21%	13%
4	14	16	19	6	16	14	14	7	2	3	16	7	10	11	26	7	19
	18%	21%	25%	8%	21%	18%	18%	9%	3%	4%	21%	9%	13%	14%	34%	9%	25%
5	5	19	9	4	10	22	7	4	0	0	3	3	1	0	5	1	7
	6%	25%	12%	5%	13%	29%	9%	5%	0%	0%	4%	4%	1%	0%	6%	1%	9%
	77						SAME										
Average	2.34	3.27	2.75	1.95	2.79	3.29	2.84	2.17	1.62	1.55	2.66	2.19	1.94	1.95	2.84	2.16	2.6
Std Dev	1.23	1.33	1.36	1.15	1.31	1.39	1.18	1.22	0.89	0.91	1.13	1.11	1.09	1.05	1.27	0.97	1.3
95% CI	0.275	0.298	0.303	0.256	0.293	0.311	0.264	0.272	0.199	0.204	0.253	0.249	0.244	0.235	0.283	0.218	0.30
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100

Rating	F1	F2	F3	F4	F5	F6	I1	I2	I3	I4	I5	I6	P1	P2	P3	P4	P5
1	9	3	4	6	3	1	4	9	12	13	8	6	5	11	6	4	3
	36%	12%	16%	24%	12%	4%	16%	36%	48%	52%	32%	24%	20%	44%	24%	16%	12%
2	6	1	8	4	10	5	7	10	6	6	7	9	8	7	7	11	6
	24%	4%	32%	16%	40%	20%	28%	40%	24%	24%	28%	36%	32%	28%	28%	44%	24%
3	2	5	5	8	4	3	4	0	3	2	3	6	6	0	4	5	4
	8%	20%	20%	32%	16%	12%	16%	0%	12%	8%	12%	24%	24%	0%	16%	20%	16%
4	5	7	5	4	5	4	7	3	3	3	4	1	5	6	7	4	10
	20%	28%	20%	16%	20%	16%	28%	12%	12%	12%	16%	4%	20%	24%	28%	16%	40%
5	3	9	3	3	3	12	3	3	1	1	3	3	1	1	1	1	2
	12%	36%	12%	12%	12%	48%	12%	12%	4%	4%	12%	12%	4%	4%	4%	4%	8%
	25						SAME										
Average	2.48	3.72	2.80	2.76	2.80	3.84	2.92	2.24	2.00	1.92	2.48	2.44	2.56	2.16	2.60	2.48	3.0
Std Dev	1.48	1.34	1.29	1.33	1.26	1.34	1.32	1.39	1.22	1.22	1.42	1.26	1.16	1.34	1.26	1.08	1.2
95% CI	0.578	0.525	0.506	0.522	0.493	0.527	0.518	0.546	0.48	0.479	0.556	0.494	0.454	0.527	0.493	0.425	0.47
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100

MAX 3.84

ENF'S

	user ID	Design pro	Construction pro	Male	College	Shy	Age	Live USA	Extraversion/Introversion	Sensing/Intuition	Thinking/Feeling	Judging/Perceiving
Count	y	3	7	9	33	4		E	47		J	16
%		6%	15%	19%	70%	9%			100%			34%
Count	n	44	40	38	14	43		I	0		P	31
%		94%	85%	81%	30%	91%			0%			66%
		100%	100%	100%	100%	100%			100%			100%

Age	Count	%
u25	0	0%
o25	5	11%
o35	24	51%
o50	18	38%
	47	100%

	Sensing/Intuition	
S	0	
	0%	
N	47	
	100%	
	100%	

Live USA	Count	%
never	0	0%
five	0	0%
ten	1	2%
moreten	4	9%
life	42	89%
	47	100%

	Thinking/Feeling	
T	0	
	0%	
F	47	
	100%	
	100%	

ENT'S

	user ID	Design pro	Construction pro	Male	College	Shy	Age	Live USA	Extraversion/Introversion	Sensing/Intuition	Thinking/Feeling	Judging/Perceiving
Count	y	4	3	10	20	0		E	25		J	11
%		16%	12%	40%	80%	0%			100%			44%
Count	n	21	22	15	5	25		I	0		P	14
%		84%	88%	60%	20%	100%			0%			56%
		100%	100%	100%	100%	100%			100%			100%

Age	Count	%
u25	0	0%
o25	3	12%
o35	9	36%
o50	13	52%
	25	100%

	Sensing/Intuition	
S	0	
	0%	
N	25	
	100%	
	100%	

Live USA	Count	%
never	0	0%
five	0	0%
ten	1	4%
moreten	5	20%
life	19	76%
	25	100%

	Thinking/Feeling	
T	25	
	100%	
F	0	
	0%	
	100%	

ESJ'S

	user ID	Design pro	Construction pro	Male	College	Shy	Age	Live USA	Extraversion/Introversion	Sensing/Intuition	Thinking/Feeling	Judging/Perceiving
Count	y	3	15	21	55	3		E	75		J	75
%		4%	20%	28%	73%	4%			100%			100%
Count	n	72	60	54	20	72		I	0		P	0
%		96%	80%	72%	27%	96%			0%			0%
		100%	100%	100%	100%	100%			100%			100%

Age	Count	%
u25	3	4%
o25	15	20%
o35	29	39%
o50	28	37%
	75	100%

	Sensing/Intuition	
S	75	
	100%	
N	0	
	0%	
	100%	

Live USA	Count	%
never	0	0%
five	0	0%
ten	0	0%
moreten	5	7%
life	70	93%
	75	100%

	Thinking/Feeling	
T	48	
	64%	
F	27	
	36%	
	100%	

	F1	F2	F3	F4	F5	F6	I1	I2	I3	I4	I5	I6	P1	P2	P3	P4	P5	P6

Survey

SAME

47

	F1	F2	F3	F4	F5	F6	I1	I2	I3	I4	I5	I6	P1	P2	P3	P4	P5	P6
Average	2.89	3.83	3.04	2.09	3.15	3.72	2.89	1.85	1.77	1.83	2.70	2.45	2.23	2.72	2.64	2.38	2.96	2.87
Std Dev	1.49	1.36	1.52	1.36	1.40	1.31	1.24	1.04	1.00	1.07	1.20	1.19	1.13	1.36	1.21	1.13	1.23	1.24
95% CI	0.427	0.388	0.434	0.39	0.4	0.376	0.354	0.298	0.287	0.306	0.342	0.341	0.322	0.39	0.345	0.324	0.352	0.356

25

	F1	F2	F3	F4	F5	F6	I1	I2	I3	I4	I5	I6	P1	P2	P3	P4	P5	P6
Average	2.32	2.92	2.76	2.76	2.84	2.84	2.80	1.76	1.64	1.44	2.80	2.32	2.08	2.32	2.64	2.08	2.72	2.52
Std Dev	1.38	1.44	1.36	1.42	1.31	1.43	1.19	1.09	0.86	0.77	1.08	1.35	1.04	1.35	1.15	0.95	1.34	1.33
95% CI	0.813	0.852	0.805	0.841	0.776	0.847	0.703	0.645	0.508	0.454	0.638	0.795	0.613	0.795	0.68	0.564	0.791	0.784
	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

75

	F1	F2	F3	F4	F5	F6	I1	I2	I3	I4	I5	I6	P1	P2	P3	P4	P5	P6
Average	2.48	3.48	3.08	2.19	2.95	3.73	2.75	2.00	1.57	1.47	2.49	2.11	2.13	2.19	2.93	2.32	2.52	2.61
Std Dev	1.41	1.35	1.40	1.41	1.34	1.37	1.27	1.05	0.90	0.78	1.12	1.01	1.18	1.17	1.40	1.09	1.43	1.32
95% CI	0.319	0.305	0.317	0.319	0.304	0.31	0.288	0.238	0.204	0.176	0.253	0.228	0.267	0.265	0.316	0.247	0.323	0.3

ok

ENF'S	FAÇADE	INTERIOR	PLAN
MOST LIKED	3.83	2.89	2.96
LEAST LIKED	2.09	1.77	2.23
RATIO ML/LL	1.84	1.64	1.32

ENF'S

% total   11%

ok

ENT'S	FAÇADE	INTERIOR	PLAN
MOST LIKED	2.92	2.80	2.72
LEAST LIKED	2.32	1.44	2.08
RATIO ML/LL	1.26	1.94	1.31

ENT'S

% Total   6%

ok

ESJ'S	FAÇADE	INTERIOR	PLAN
MOST LIKED	3.73	2.75	2.93
LEAST LIKED	2.19	1.47	2.13
RATIO ML/LL	1.71	1.87	1.38

ESJ'S

%Total   17%

KEIRSEY BATES DATA ANALYSIS

	user ID	Design pro	Construction pro	Male	College	Shy	Age	Live USA	Extraversion/Introversion	Sensing/Intuition	Thinking/Feeling	Judging/Perceiving

INF'S

	user ID	Design pro	Construction pro	Male	College	Shy		Live USA	Extra/Intro		Think/Feel	Judg/Perc
Count	y	5	3	14	24	18		E	0		J	16
%		14%	8%	38%	65%	49%			0%			43%
Count	n	32	34	23	13	19		I	37		P	21
%		86%	92%	62%	35%	51%			100%			57%
		100%	100%	100%	100%	100%			100%			100%

Age: u25 3 8%; o25 4 11%; o35 11 30%; o50 19 51%; total 37 100%
S 0 / 0%; N 37 / 100% (100%)
never 0 0%; five 0 0%; ten 0 0%; moreten 3 8%; life 34 92%; total 37 100%
T 0 / 0%; F 21 / 57% (57%)

INT'S

	user ID	Design pro	Construction pro	Male	College	Shy		Live USA	Extra/Intro		Think/Feel	Judg/Perc
Count	y	2	8	16	16	11		E	0		J	10
%		9%	35%	70%	70%	48%			0%			43%
Count	n	21	15	7	7	12		I	23		P	13
%		91%	65%	30%	30%	52%			100%			57%
		100%	100%	100%	100%	100%			100%			100%

Age: u25 1 4%; o25 4 17%; o35 7 30%; o50 10 43%; total 22 96%
S 0 / 0%; N 23 / 100% (100%)
never 1 4%; five 1 4%; ten 0 0%; moreten 2 9%; life 18 78%; total 22 96%
T 23 / 100%; F 0 / 0% (100%)

ISJ'S

	user ID	Design pro	Construction pro	Male	College	Shy		Live USA	Extra/Intro		Think/Feel	Judg/Perc
Count	y	6	23	43	101	57		E	0		J	141
%		4%	16%	30%	72%	40%			0%			100%
Count	n	135	118	98	40	84		I	141		P	0
%		96%	84%	70%	28%	60%			100%			0%
		100%	100%	100%	100%	100%			100%			100%

Age: u25 3 2%; o25 16 11%; o35 43 30%; o50 79 56%; total 141 100%
S 141 / 100%; N 0 / 0% (100%)
never 0 0%; five 0 0%; ten 0 0%; moreten 6 4.3%; life 135 96%
T 77 / 55%; F 64 / 45% (100%)

		Survey															
	F1	F2	F3	F4	F5	F6	I1	I2	I3	I4	I5	I6	P1	P2	P3	P4	P5	P6
1																		
2																		
3																		
4																		
5																		
37																		
Average	2.65	3.54	2.54	2.16	2.86	3.35	2.57	2.05	1.62	1.51	2.22	1.95	2.46	2.19	2.92	2.35	3.16	2.57
Std Dev	1.55	1.41	1.32	1.26	1.32	1.42	1.26	0.94	0.86	0.96	1.20	1.25	1.17	1.31	1.21	0.95	1.38	1.17
95% CI	0.499	0.453	0.427	0.406	0.424	0.457	0.406	0.303	0.278	0.31	0.388	0.401	0.377	0.422	0.39	0.306	0.446	0.376
1																		
2																		
3																		
4																		
5																		
23																		
Average	2.48	3.65	2.65	2.70	2.74	3.04	2.70	1.96	1.48	1.87	2.91	2.26	2.52	2.65	3.26	2.39	2.78	2.35
Std Dev	1.34	1.27	1.53	1.55	1.10	1.36	1.33	1.07	0.79	1.29	1.24	1.29	1.24	1.27	1.18	1.12	1.35	1.19
95% CI	0.549	0.517	0.624	0.634	0.448	0.558	0.543	0.435	0.323	0.527	0.507	0.526	0.506	0.517	0.481	0.457	0.55	0.487
141																		
Average	2.44	3.43	2.81	1.93	2.94	3.57	2.68	2.06	1.55	1.48	2.44	2.11	2.08	2.12	2.91	2.30	2.85	2.77
Std Dev	1.33	1.29	1.40	1.16	1.36	1.35	1.16	1.16	0.84	0.82	1.13	1.07	1.15	1.15	1.26	1.07	1.31	1.23
95% CI	0.219	0.214	0.232	0.192	0.224	0.223	0.192	0.191	0.139	0.136	0.187	0.177	0.189	0.19	0.208	0.176	0.217	0.203

ok

INF'S	FAÇADE	INTERIOR	PLAN
MOST LIKED	3.54	2.57	3.16
LEAST LIKED	2.16	1.51	2.19
RATIO ML/LL	1.64	1.70	1.44

INF'S

% Total   8%

ok

INT'S	FAÇADE	INTERIOR	PLAN
MOST LIKED	3.65	2.91	3.26
LEAST LIKED	2.48	1.48	2.35
RATIO ML/LL	1.47	1.97	1.39

INT'S

% Total   5%

ok

ISJ'S	FAÇADE	INTERIOR	PLAN
MOST LIKED	3.57	2.68	2.91
LEAST LIKED	1.93	1.48	2.08
RATIO ML/LL	1.85	1.82	1.40

ISJ'S

% Total   32%

	user ID	demographics						Live USA	Meyers-Briggs			
		Design pro	Construction pro	Male	College	Shy	Age		Extraversion/Introversion	Sensing/Intuition	Thinking/Feeling	Judging/Perceiving
							141	100%				
Count	y	2	4	22	32	20		E	0		J	0
%		4%	8%	43%	63%	39%			0%			0%
Count	n	49	47	29	19	31		I	51		P	51
%		96%	92%	57%	37%	61%			100%			100%
		100%	100%	100%	100%	100%			100%			100%

ISJ'S

Age			Sensing/Intuition	
u25	3	6%	S	51
o25	6	12%		100%
o35	17	33%	N	0
o50	25	49%		0%
51	100%		100%	

			Thinking/Feeling	
never	0	0%	T	25
five	0	0%		49%
ten	0	0%	F	26
moreten	4	8%		51%
life	47	92%	100%	
51	100%			

Count	y	1	13	9	28	1		E	43		J	0
%		2%	30%	21%	65%	2%			100%			0%
Count	n	42	30	34	15	42		I	0		P	43
%		98%	70%	79%	35%	98%			0%			100%
		100%	100%	100%	100%	100%			100%			100%

ESP'S

Age			Sensing/Intuition	
u25	2	5%	S	43
o25	8	19%		100%
o35	18	42%	N	0
o50	15	35%		0%
43	100%		100%	

			Thinking/Feeling	
never	0	0%	T	17
five	0	0%		40%
ten	0	0%	F	26
moreten	4	9%		60%
life	39	91%	100%	
43	100%			

							Survey										
	F1	F2	F3	F4	F5	F6	I1	I2	I3	I4	I5	I6	P1	P2	P3	P4	P5	P6
	51																	
Average	2.51	3.71	2.92	2.35	2.86	3.53	2.86	2.27	1.61	1.65	2.61	2.31	2.27	2.04	2.45	2.45	2.92	2.61
Std Dev	1.38	1.20	1.35	1.32	1.28	1.33	1.31	1.30	1.02	1.05	1.18	1.10	1.11	1.18	1.21	1.10	1.21	1.10
95% CI	0.378	0.331	0.372	0.363	0.352	0.366	0.36	0.356	0.28	0.29	0.325	0.303	0.306	0.325	0.331	0.302	0.333	0.301
	43																	
Average	2.72	4.21	3.12	1.95	3.00	3.93	2.81	2.09	1.60	1.65	2.70	2.58	2.53	2.40	3.12	2.49	2.91	2.70
Std Dev	1.39	1.10	1.40	1.13	1.25	1.30	1.12	1.13	0.93	1.02	1.12	1.20	1.26	1.20	1.20	1.14	1.38	1.21
95% CI	0.414	0.33	0.419	0.339	0.375	0.388	0.334	0.338	0.278	0.305	0.336	0.359	0.377	0.358	0.358	0.341	0.412	0.36

ok

ISP'S

% Total   12%

ISP'S	FAÇADE	INTERIOR	PLAN
MOST LIKED	3.71	2.86	2.92
LEAST LIKED	2.35	1.61	2.04
RATIO ML/LL	1.58	1.78	1.43

ok

ESP'S

% Total   10%

ESP'S	FAÇADE	INTERIOR	PLAN
MOST LIKED	4.21	2.81	3.12
LEAST LIKED	1.95	1.60	2.40
RATIO ML/LL	2.15	1.75	1.30

100%

CONFIDENCE INTERVAL DATA

REV 2

	F1	F2	F3	F4	F5	F6	I1	I2	I3	I4	I5	I6	P1	P2	P3	P4	P5	P6	SUM	# SAMPLES
GENERAL	0.13	0.12	0.13	0.12	0.12	0.13	0.11	0.10	0.08	0.09	0.11	0.11	0.11	0.11	0.12	0.10	0.12	0.11	2.04	442
INT	0.55	0.52	0.62	0.63	0.45	0.56	0.54	0.44	0.32	0.53	0.51	0.53	0.51	0.52	0.48	0.46	0.55	0.49	9.19	23
ESP	0.41	0.33	0.42	0.34	0.37	0.39	0.33	0.34	0.28	0.31	0.34	0.36	0.38	0.36	0.36	0.34	0.41	0.36	6.42	43
ESJ	0.32	0.31	0.32	0.32	0.30	0.31	0.29	0.24	0.20	0.18	0.25	0.23	0.27	0.26	0.32	0.25	0.32	0.30	4.98	75
ISJ	0.22	0.21	0.23	0.19	0.22	0.22	0.19	0.19	0.14	0.14	0.19	0.18	0.19	0.19	0.21	0.18	0.22	0.20	3.51	141
ISP	0.38	0.33	0.37	0.36	0.35	0.37	0.36	0.36	0.28	0.29	0.33	0.30	0.31	0.32	0.33	0.30	0.33	0.30	5.97	51
ENF	0.43	0.39	0.43	0.39	0.40	0.38	0.35	0.30	0.29	0.31	0.34	0.34	0.32	0.39	0.34	0.32	0.35	0.36	6.43	47
INF	0.50	0.45	0.43	0.41	0.42	0.46	0.41	0.30	0.28	0.31	0.39	0.40	0.38	0.42	0.39	0.31	0.45	0.38	7.07	37
ENT	0.81	0.85	0.81	0.84	0.78	0.85	0.70	0.64	0.51	0.45	0.64	0.80	0.61	0.80	0.68	0.56	0.79	0.78	12.90	25
																				442

CI IS NARROW AND CHOICE IS MOST PREFERRED
CI IS NARROW AND CHOICE IS LEAST PREFERRED

	F1	F2	F3	F4	F5	F6	I1	I2	I3	I4	I5	I6	P1	P2	P3	P4	P5	P6		
67%	298	FEMALES																		
Average	2.55	3.57	3.04	2.01	3.06	3.77	2.63	1.89	1.45	1.48	2.48	2.08	2.23	2.38	2.84	2.35	2.84	2.73	% total	67%
Std Dev	1.45	1.34	1.37	1.27	1.37	1.31	1.20	1.07	0.77	0.85	1.16	1.14	1.17	1.26	1.30	1.05	1.34	1.23		
95% CI	0.164	0.152	0.155	0.144	0.156	0.149	0.137	0.121	0.088	0.096	0.132	0.129	0.133	0.143	0.147	0.12	0.152	0.14		
General Average		hi		lo			hi		lo				lo	lo	hi		hi			
33%	144	MALES																		
Average	2.53	3.59	2.58	2.44	2.68	3.12	2.76	2.28	1.78	1.72	2.52	2.27	2.22	2.01	2.90	2.35	2.83	2.56	% total	33%
Std Dev	1.27	1.28	1.45	1.33	1.16	1.39	1.28	1.16	0.98	1.03	1.14	1.06	1.15	1.12	1.19	1.12	1.32	1.22		
95% CI	0.208	0.209	0.236	0.217	0.189	0.226	0.208	0.189	0.159	0.169	0.186	0.173	0.188	0.182	0.194	0.183	0.215	0.199		

GENDER PREFERENCES

	FAÇADE		INTERIOR		PLAN	
	ML	LL	ML	LL	ML	LL
MALES 33%	F2	F4	I1	I4	P2	P3
FEMALES 67%	F6	F4	I1	I3	P3/P5	P1
General Average	F2/F6	F4	I1	I4	P3/P5	P1/P2

Different from general averages

	F1	F2	F3	F4	F5	F6	I1	I2	I3	I4	I5	I6	P1	P2	P3	P4	P5	P6	
	67																		
Average	2.85	3.74	2.94	2.08	2.89	3.70	2.83	2.03	1.41	1.61	2.62	2.02	2.21	2.35	2.83	2.41	2.61	2.36	CONSTRUCTION PROFESSIONALS
Std Dev	1.46	1.32	1.41	1.33	1.20	1.23	0.99	1.01	0.72	0.97	1.03	0.95	1.14	1.21	1.20	0.94	1.32	1.09	
95% CI	0.35	0.315	0.338	0.318	0.288	0.294	0.236	0.241	0.173	0.233	0.248	0.228	0.274	0.289	0.287	0.226	0.317	0.261	
	17																		
Average	2.41	3.29	2.41	2.29	2.29	2.88	2.18	1.82	1.88	1.59	1.88	1.71	2.12	2.29	2.53	2.35	3.12	2.47	DESIGN PROFFESSIONALS
Std Dev	1.33	1.36	1.12	1.10	1.26	1.45	1.24	1.07	0.93	1.00	1.05	1.10	1.05	1.16	1.37	1.11	1.41	1.33	
95% CI	0.63	0.646	0.533	0.525	0.6	0.691	0.588	0.511	0.441	0.477	0.501	0.525	0.501	0.551	0.653	0.53	0.67	0.631	
	9																		
Average	3.33	3.89	2.11	2.67	2.44	3.22	3.22	1.89	2.00	1.78	2.78	2.33	2.33	2.44	3.89	2.44	3.44	2.67	BOTH DESIGN AND CONSTRUCTION PROFF
Std Dev	1.12	1.17	1.45	1.58	0.88	1.56	1.39	0.93	1.12	1.09	1.56	1.22	1.32	1.24	1.45	1.13	1.67	1.41	
95% CI	0.73	0.762	0.949	1.033	0.576	1.021	0.911	0.606	0.73	0.714	1.021	0.8	0.864	0.808	0.949	0.739	1.089	0.924	

PROFESSIONALS' PREFERENCES COMPARED TO AVERAGES						
	FAÇADE		INTERIOR		PLAN	
	ML	LL	ML	LL	ML	LL
DESIGN PROFESSIONALS	F2	F4	I1	I3	P3	P1
CONSTRUCTION PROFESSIONALS	F2	F4/F5	I1	I4	P5	P1
BOTH DESIGN AND CONST	F2	F3	I1	I4	P3	P1
general averages	f2/f6	f4	i1	i4	p3/p5	p1/p2

▢ Differs from averages

APPENDIX E

WASHINGTON STATE UNIVERSITY

Research Compliance Office

MEMORANDUM

TO: **Kristyn Clayton**
Interdisciplinary Design Institute, Spokane (3899)

FROM: Malathi Jandhyala (for) Kris Miller, Chair, WSU Institutional Review Board (3140) *MJ*

DATE: 7 March 2007

SUBJECT: Approved Continuing Review of Human Subjects - Continuing Review

The information provided for the continuing review of your protocol titled *"Thesis for Masters of Science in Architecture,"* IRB Number **9015**-b was reviewed for the protection of the subjects participating in the study. Based on the information received from you, the IRB has given **approval** to continue your human subjects protocol for another year starting **6 March 2007**.

The IRB approval indicates that the study protocol as presented in the Human Subjects Form by the investigator, is designed to adequately protect the subjects participating in the study. This approval does not relieve the investigator from the responsibility of providing continuing attention to ethical considerations involved in the utilization of human subjects participating in the study.

This approval expires on 4 March 2008. If any significant changes are anticipated to the study protocol you must notify the IRB and receive approval before implementation.

In accordance with federal regulations, this approval letter and a copy of the approved protocol must be kept with any copies of signed consent forms by the researcher for THREE years after completion of the research.

This institution has a Human Subjects Assurance Number FWA0000294G which is on file with the Office for Human Research Protections. WSU's Assurance of Compliance with the Department of Health and Human Services Regulations Regarding the Use of Human Subjects can by reviewed on OGRD's homepage (http://www.ogrd.wsu.edu/) under "Electronic Forms," OGRD Memorandum #6.

If you have questions, please contact the Institutional Review Board at Research Compliance Office at (509) 335-9661. Any revised materials can be mailed to Research Compliance Office (Campus Zip 3140), faxed to (509) 335-1676, or in some cases by electronic mail, to *irb@wsu.edu*. If materials are sent by email attachment, please make sure they are in a standard file type, (i.e., ASCII text [.txt], or Rich Text Format [.rtf]).

Review Type: REN   OGRD No.: NF
Review Category: XMT   Agency: NA
Date Received: 5 February 2007