COLOR theory

Lecture (5 and 6) : Fields of Design

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Fields of Design

- In this lecture ,we will describe individual fields of design together with their potential color concepts also will present examples, illustrated with photos, and make proposals in the form of collages.

   We will explain each of these fields :

- Educational Institutions (schools)
- Workplaces (Offices)
- Medical Facilities
- Restaurants
- Retail

SCHOOLS

SCHOOLS

- When it comes to color in the learning environment, **function trumps aesthetics.**

- **Educational goals , teaching methods** and intentions are of key importance to a school's design.

- So ,The choice of color in schools can have a critical impact on students , it can enhance or impair learning, morale, and behaviors,. Studies have shown that color affects a **student's attention span , perception of time** and can **reduce absenteeism and vandalism**.

- The science of color physiology is the reason to pick a blue over a red, or an orange over a purple. **The well executed color palette** can <u>enhance</u> the **absorption of information & facilitate the thinking process**.

SCHOOLS

Color Preference by Age:

- Color supports a child's developmental process. Researches , maintain that being sensitive to each age group's different responses to color is key in creating an environment stimulating to their educational experience.
- School systems divided into years or grades can be found everywhere in the world, :
1. Kindergarten and Early Elementary.
2. Middle School and High School .

SCHOOLS

1. Kindergarten and Early Elementary:

- In general rule , (kindergarten and early elementary) students gravitate towards bright colors, primarily warm colors, such as(red , yellow, green ,blue and violet).
- These colors schemes seem to complement the active, energizing nature of children.
- But ,there are differences in applying :
1. For (kindergarten students) , find high contrast and (the rich value) are suitable for there stimulating with a growing penchant for colors in graphics.
2. while (Early Elementary), these colors may be better used as accents as these colors may be too harsh on full walls. While color brightness and intensity are useful in attracting attention.

SCHOOLS

2. Middle School and High School

- Middle school and high school teens have a growing appreciation of sophisticated color and tend to view primary colors as immature.

- Often influenced by prevailing fashion, young teens typically reject neutral colors in favor of blue, ultramarine, and also favorite orange.

- Subtle colors work well, such as light greens and refreshing blues, with brighter trendy, and more saturated hues used as accents.

SCHOOLS

Corridors:

- Colors are a way of **marking different functional areas**; they can vary according to the age of the students and serve as a means of orientation and organization .
- Corridors, circulation areas, and connecting rooms, as well as common areas, should be distinguishable from one another in terms of color.
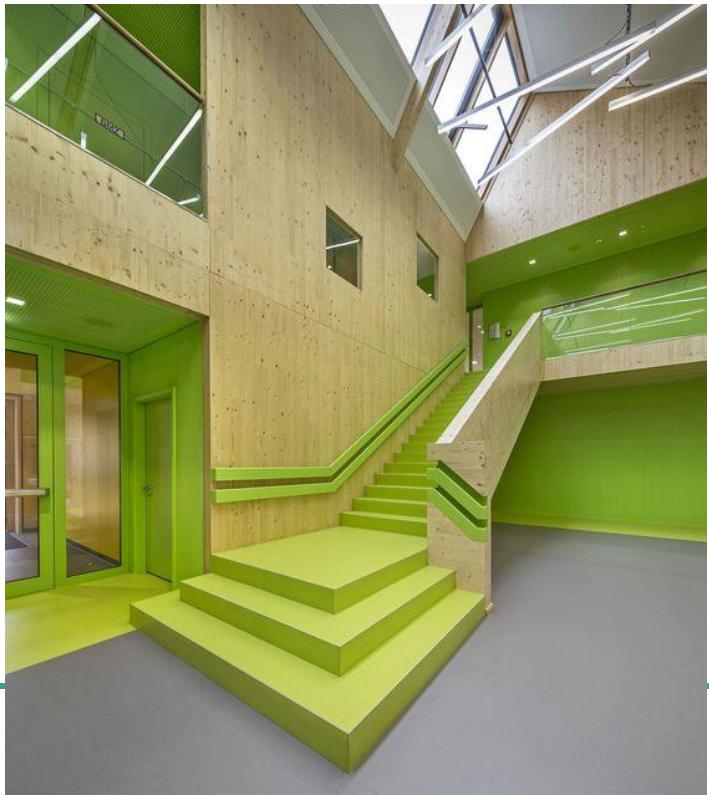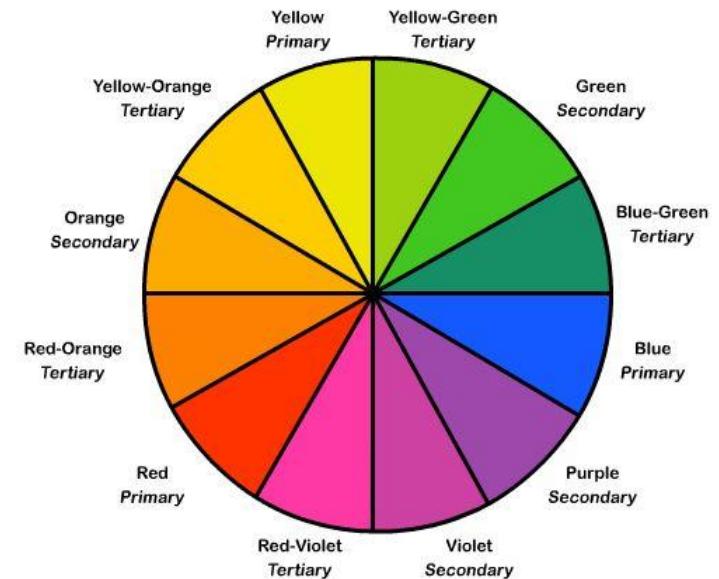
As younger students enter their school, the environment should embrace them, welcome them, and provide feelings of support and enrichment.

- School entrances & hallways in high school are a great platform to show school colors (community).
- So it used stronger colors to uplift the energy in the walk between classes, balanced out with neutrals.

- **A simple system of organization and orientation can also be realized using doors and similar architectural elements.**

SCHOOLS

class rooms :

Criteria of classroom color designing :

- The heart of the school beats in the classroom , Its atmosphere should convey a sense of security and familiarity and foster concentration .
- it is important in designing any classroom color scheme that the contrast between the blackboard and its surroundings be kept to a minimum , <u>So this can be achieved by:</u>

1. using natural materials, such as wood, parquet flooring, cork products, and textiles .These materials can span from hard to soft between plaster and concrete surfaces .

SCHOOLS

- **The important factor in classrooms materials is the (LRV)** (Light Reflectance Value) .
- **(LRV)** A measurement commonly used by design professionals to identify the percentage of light that is reflected from a surface, light reflectance value (LRV) supports our understanding of the amount of light that will be reflected from the surface.

AREA	LRV Percentage
Ceilings	70% - 90%
General Wall Color in Classrooms	60% - 70%
Feature Walls	20% - 50%
Work Surface	30% - 80%
Floors	15% - 40%

SCHOOLS

Criteria of classroom color designing :

2. **Using a feature wall in classrooms:**

- The front walls in class rooms where students face a specific direction not only draws attention to the front of the room but creates an effective contrast with visual aids , such as chalk boards to allow students to relax their eyes when looking up from their desks.

- Visual boredom can be lessened also by adding a contrasting color to the front wall(feature wall) . The side and back walls then could be more neutral , such as tan ,gray or beige.

- **A feature wall of approximately 20 % to 50 % OF (LRV) will add greater visibility to teacher and educational materials and relieve eye strain as student transitions from coursework to instructor.**

SCHOOLS

The design of classroom color schemes is so important in any school, Because of the extensive amount of time spent in classrooms, it is important to exercise a certain amount of restraint when choosing which colors to use, the following colors are examples :

- The blue color family works well in science & math based classrooms by lowering the heart rate & allowing concentration to kick in .

- Oranges & peach tones support athletic facilities, drama, media centers & cafeteria settings. (note: too much can overstimulate so best to balance out with a complimentary cool tone.
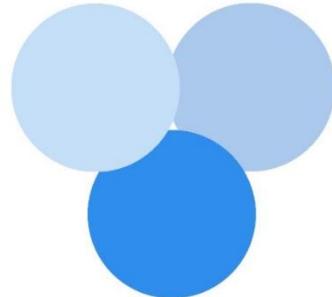

BLUE TONES
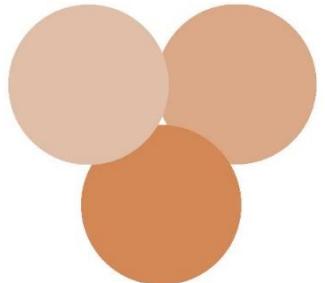
ORANGE TONES

- **Gentle energy yellows** are great for classrooms dealing with languages & other creatives like fine art, dance, culinary arts.
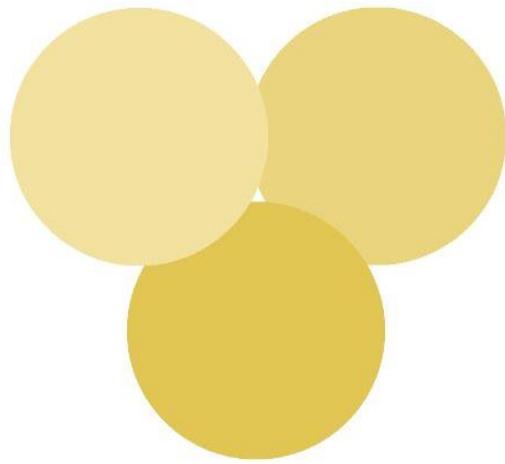
YELOW TONES
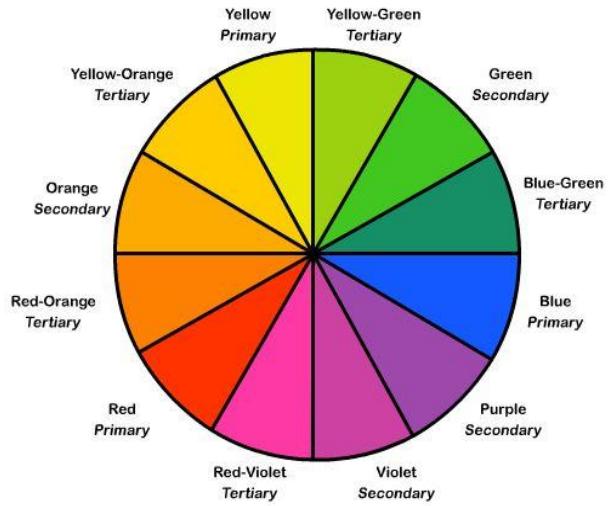
SCHOOLS

- **Middle school students prefer bright, medium colors in cool tones such as greens, and blues with orange accents.**

- **Gyms for teens should use active colors and graphics .**

Offices

Offices

- Job performance is closely associated with satisfaction in the working environment.

- According to Hugo Schmale, insufficient cognitive and sensory stimulation in monotonous work surroundings leads to a reduction in vocational, professional, and communicative skills, and eventually a breakdown in individual personality.

- So ,It is **important to design office spaces** <u>that will lift employees spirits, not depress them</u> .

- So, **Applied color physiology** and environmental psychology are devoted to <u>aesthetic criteria and visual ergonomics</u>.

- Office design professionals are acutely aware that certain colors can positively contribute to happiness, productivity, and even physical health in a workplace.

Offices

- Office design teams need to look at and understand : **the combination and relationship between other elements with colors like lighting, textures, furniture and also the company culture.**
- The key is **finding the right balance** and creating a space that is comfortable and where staff can work productively and also where they enjoy working.

Offices
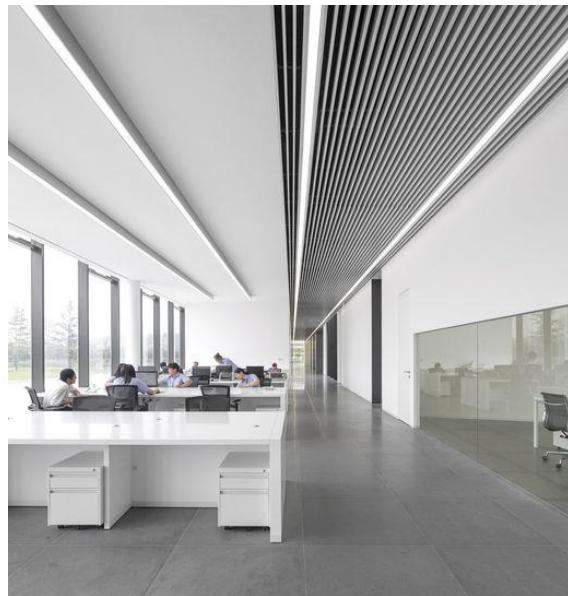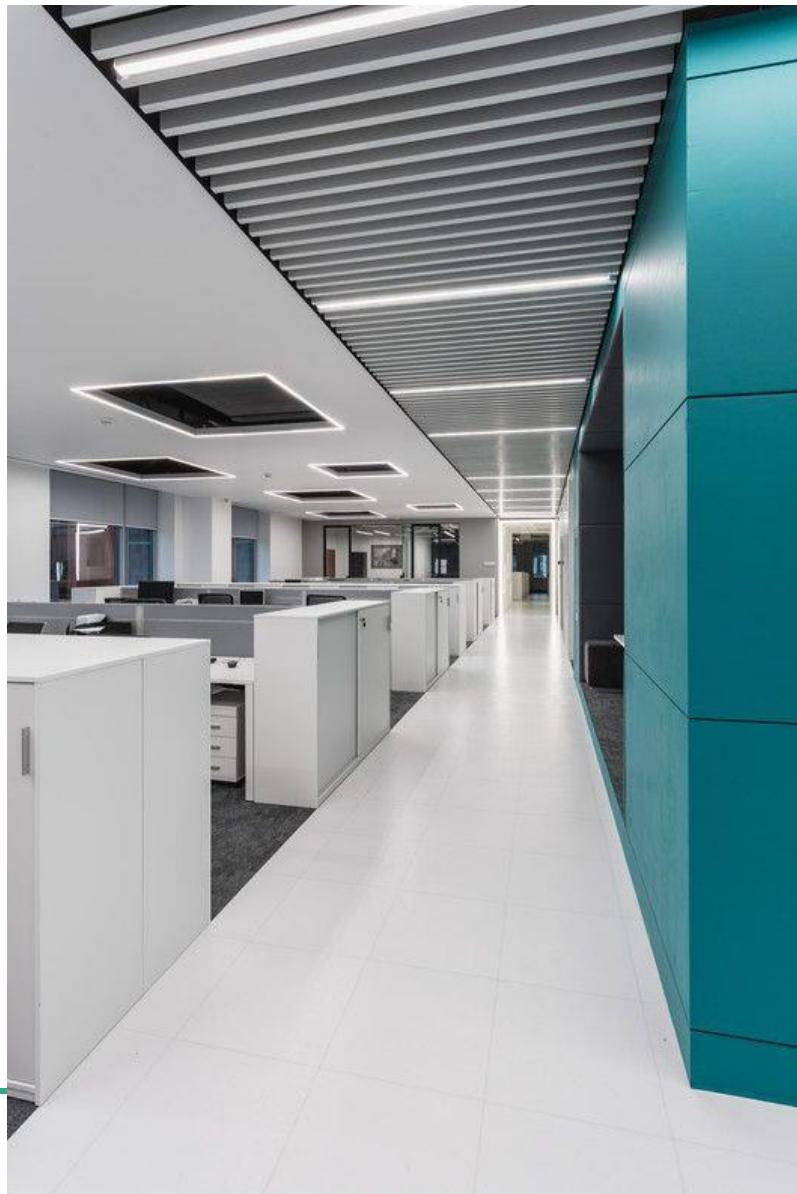
Boring offices...

- In all offices , colors are used in the surroundings (Off –white ,beige, and gray) .
- Usually , These are the <u>**formal colors**</u> which used in any workplace and they are <u>(not very stimulating if additional color is not added)</u> ! .

Offices

physiology of colors in offices :

With regard to specific colors and color combinations, physiology of colors in offices are :

• Blue is a commonly used workplace color as it can prove to have a positive impact on productivity, and is frequently used in open plan work spaces .

• Yellow is viewed as an optimistic color and can inspire increased levels of creativity and can be found in a lot of creative workspace, particularly in areas designed for collaboration

• Red is an interesting choice and can foster increased efficiency but shouldn't be used in vast spaces and is more commonly seen in break out spaces and smaller meeting rooms .

• Green can have a calming impact and as it is less harsh on the eyes, can reduce fatigue.

Offices

- In some office environments , creating a <u>formal or corporate image</u> is important.

- Using of natural materials ,such as marble , bricks and wood.

- However ,the brightness contrast ratio needs to be proportionate.
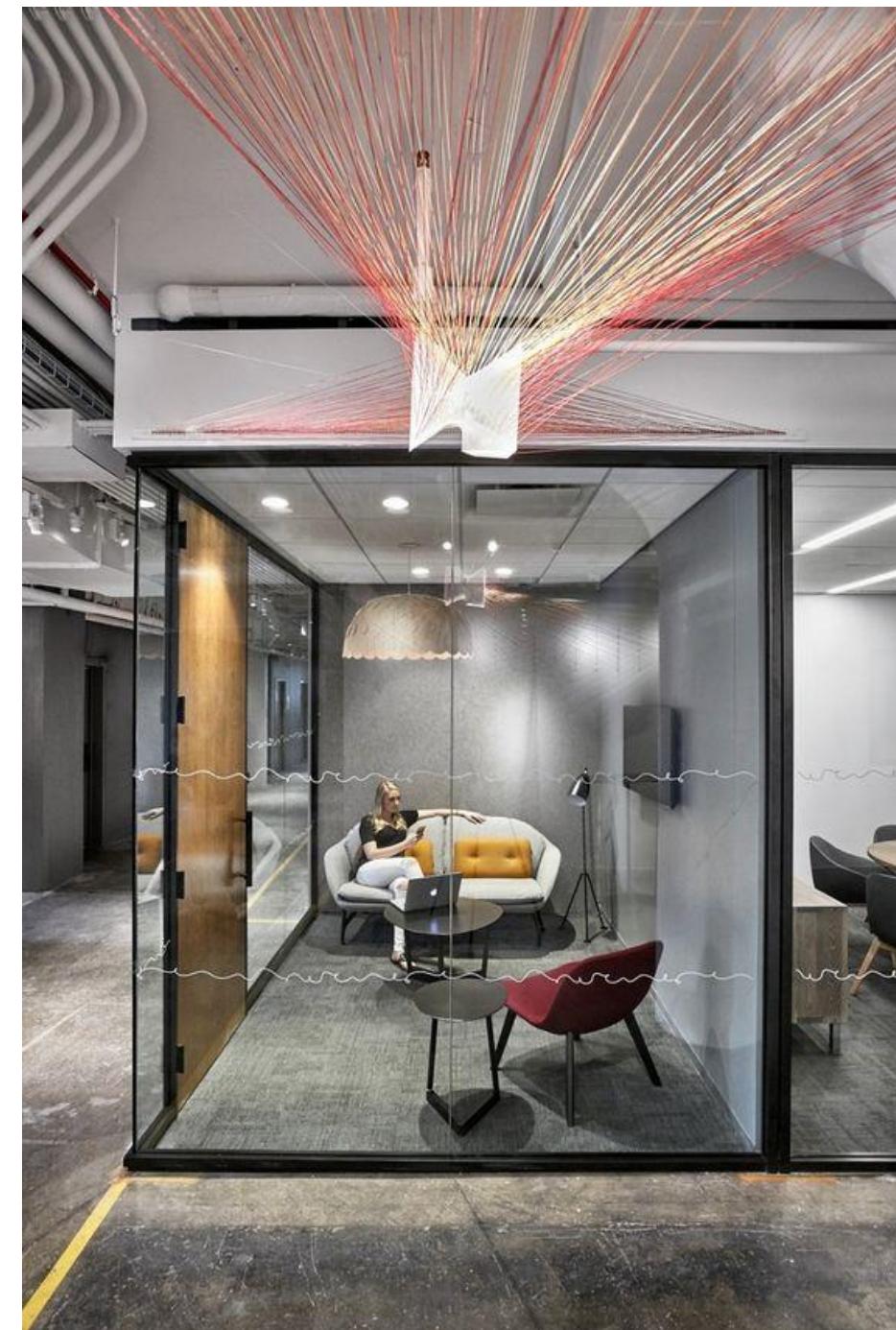
Offices

- Another way to express prestige and status is through the use of black, gray , and white with one or more accent colors might be used, for example.

- Because white reflects (80%) of light ,and black approximately (5%) ,a brightness contrast ratio of (16 to 1), could be physical eye discomfort.
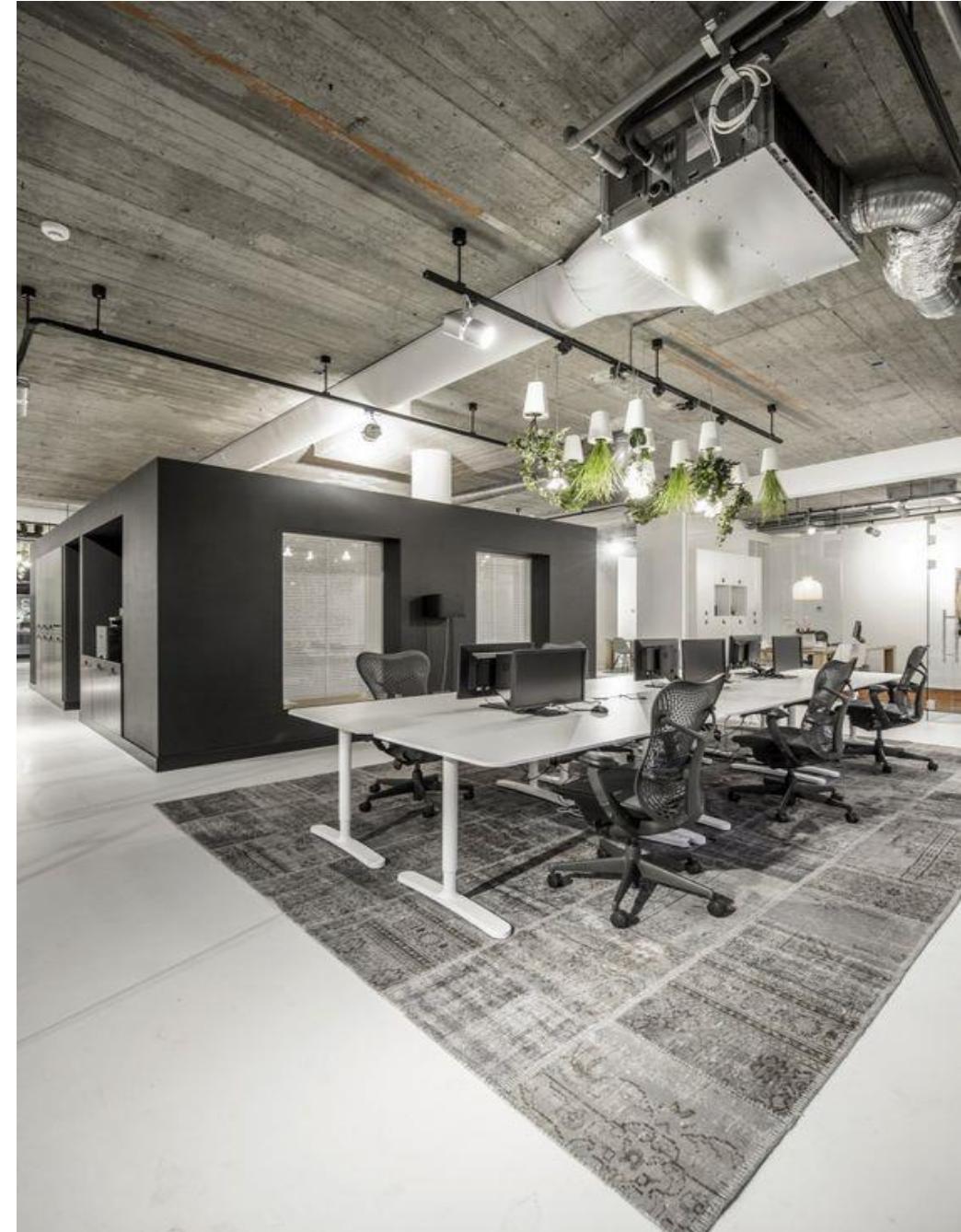
Offices

In Addition to the furniture design creativity and the space , To promote the best productivity for anyone who will be using the office space :

- Add additional color to the office design:
  1. Cooler colors : (greens, blues, purples) are often associated with being relaxed and inviting .

Offices

- **Aesthetics and colors trump and enhance the function**
- **Low-reflective surfaces should be used in areas where workers must use their eyes a great deal for visual tasks.**

Offices

2. <u>warm colors</u> for example (yellowish-beige or yellows , oranges and reds) has been found to create a cheerful atmosphere and improve work concentration , also are often associated with creativity inspiration .
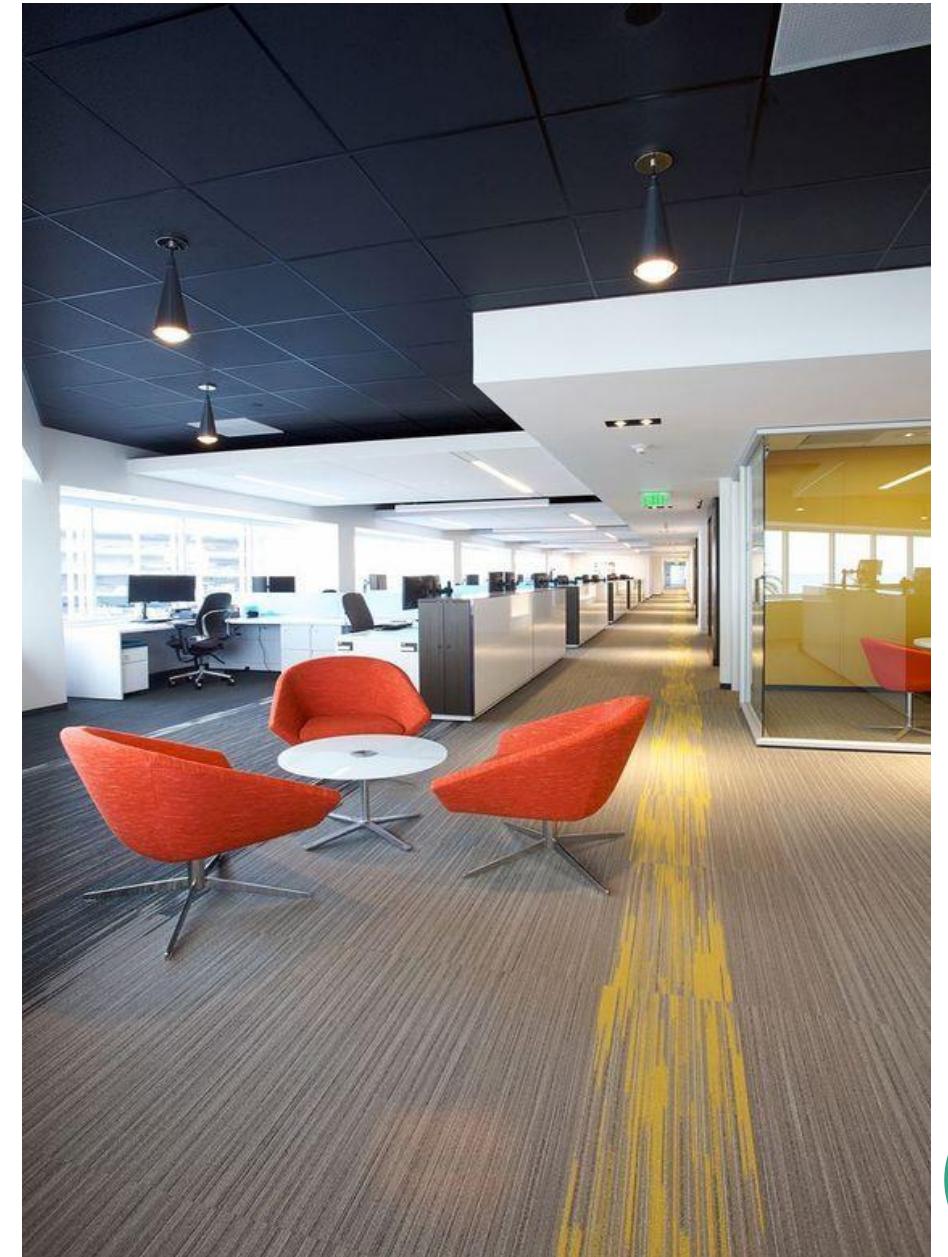
Injecting some color through office furniture can be a good idea …

Offices
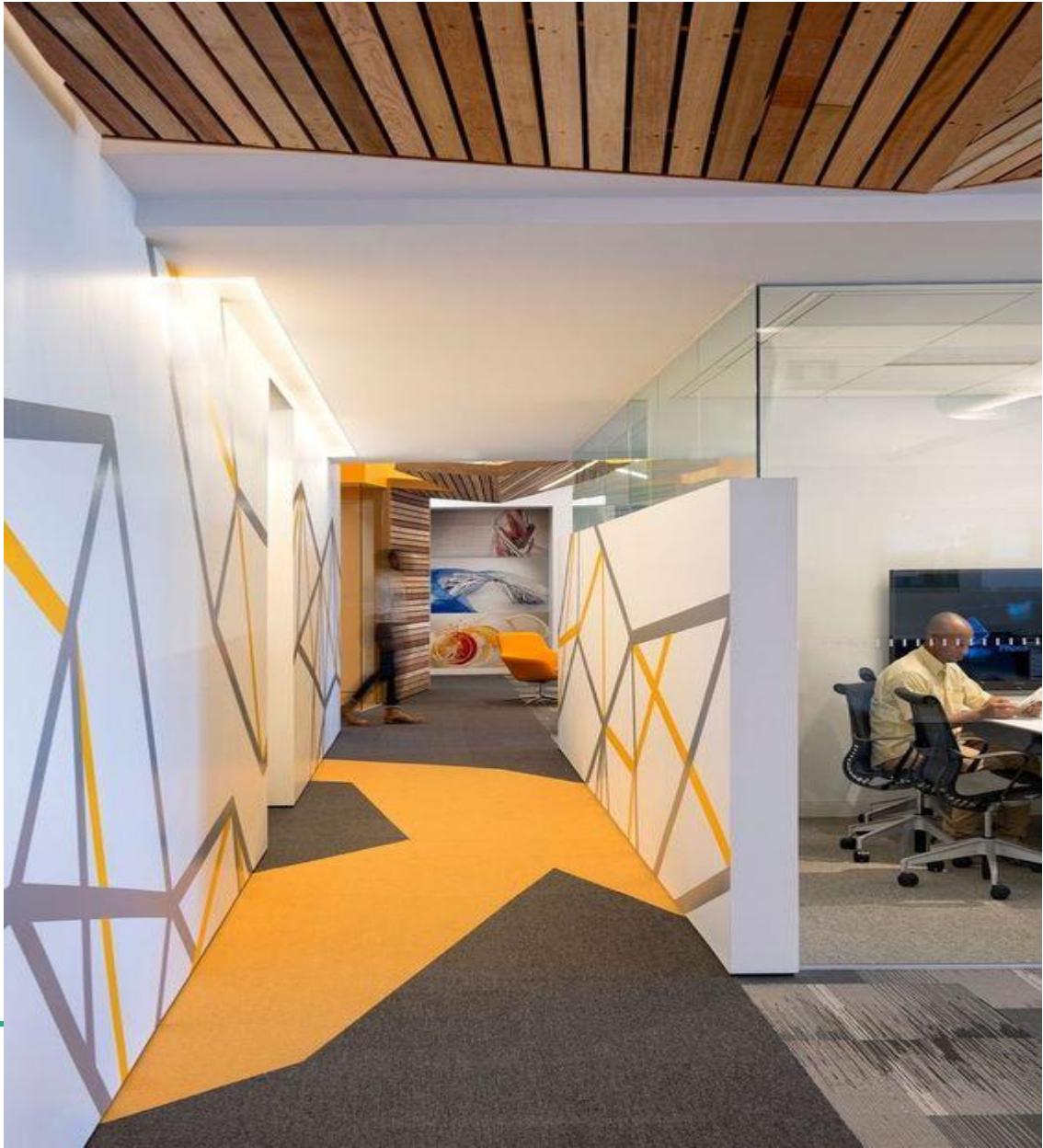
- the lighter color hues as they often help convey a sense of calm, airiness, and openness.
- (don't use very bold and bright colors unless you use them in specific areas and at a minimum.

Offices

Power Play Palette in offices :

- **Inspired by modern tech, we have this bold palette is filled with daring colors that generate a futuristic energy in any office.**
- **This palette can transform any space into a work of art by contrasting the shades with simplistic interiors.**

SW 6885
Knockout Orange
Interior

SW 6907
Forsythia
Interior / Exterior

SW 6959
Blue Chip
Interior / Exterior
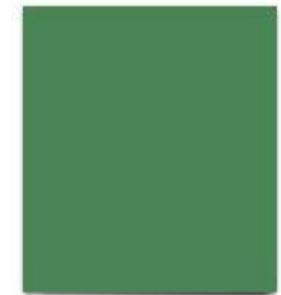
SW 6740
Kilkenny
Interior

SW 6817
Gentian
Interior / Exterior

SW 6860
Eros Pink
Interior / Exterior

SW 6767
Aquarium
Interior / Exterior
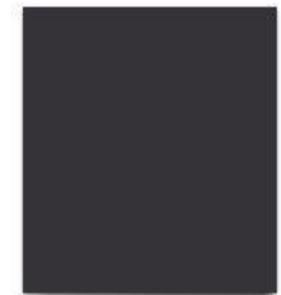
SW 6989
Domino
Interior / Exterior

Medical Facilities

Medical Facilities

- Medical Facilities are places that convey a feeling of peace and calm. It is important to manage these atmosphere with right color tones. Keenly notice the walls and decide what colors can be used.

- Color in a healthcare environment should do much more than just make the building look attractive. Well-chosen decor can contribute positively to the creation of an environment in which patients can feel comfortable and at ease.

- In the study "Effects of Color" ,by Bartholet hypothesizes that : color could be used to motivate sick people to get well and possibly to improve nursing care.

- It was also concluded that since green is frequently associated with sickness and nausea ,patient rooms should not be painted this color.

- After doing research in to color preferences on a depressed group, t h e researchers discovered that the group members had a strong preference for bright colors .

Medical Facilities

- **Corridors and receptions** can often be confusing, so to aid navigation and wayfinding, long corridors can be divided with strong accent colors, either for directional purposes or to identify different departments.
- Areas behind reception desks, in particular should stand out.

Medical Facilities

- **In waiting rooms ,** color schemes should be uplifting and interesting, with accent colors used to highlight different departments and to create modern and temporary environments.

- generally use more brightly saturated colors to create a cheerful atmosphere, and can be used as a method of way finding throughout a facility.

Medical Facilities

- <u>In patient rooms</u>, interior design should be light and fresh. It is difficult for the patients to adjust according to bright colors instead of blue, green or white shades.

- Neutral warm or White colors is commonly used in majority of hospital walls. It is because it offers calm and peace mood to the visitors. The second reason to choose white color is it denotes cleanliness.

Medical Facilities

- **Blue and green walls** create a calming effect , It promotes peaceful atmosphere and encourages concentration.
- Feng-shui experts, psychologists and designers tend to consider color like blue as it makes to feel more balanced, less emotional and calmer.
- To give interest, a softer palette can be used to highlight key features such as behind sinks, cupboard doors or window walls.

Medical Facilities

Medical Facilities

- <u>Operating rooms</u> need extra special consideration, with walls usually painted of medium tones of green or blue/green in color , Because :

1. This is a very deliberate move to counteract the effect on the eye of prolonged staring at the deep red of open wounds.

2. As green is the complimentary color to red, it can neutralize the after image produced by the surgeon's concentration. A cooler, muted palette is recommended in these areas.

Medical Facilities
Color and Mental Health

- **Color has the ability to evoke and promote emotions; in turn this can influence one's mental wellbeing and is especially relevant in healthcare facilities.**
- **The following chart illustrates the various ways different colors are believed to influence mental health.**

Colour	Helps to Treat	Avoid in Cases of
Red	Depression, negativity, shyness	Anger, irritability
Orange	Depression, negativity, trauma, stress, bereavement and loss	
Gold	Depression [especially during menopause], stress, anxiety	
Yellow	Depression, despair, fatigue, negativity, sensitivity to criticism, lack of confidence	Insomnia, hyperactivity
Green	Stress, anxiety, self-pity, confusion	
Turquoise	Stress, anxiety, anger	
Blue	Insomnia, stress, anxiety, over-excitement, anger	
Indigo	Anger, obsessions, psychosis, insomnia, anxiety	Depression, loneliness
Violet	Stress, anxiety, obsessions, low self-esteem, severe depression	
Magenta	Aggression	
Pink	Difficult relationships, insomnia, anger, aggression, over-sensitivity	

Medical Facilities

In healthcare facilities , Avoid to use these colors :

1. **Pure white** is seldom used for walls because it is highly reflective and harsh on the eyes , even though **pure white** has been traditionally associated with sterilized environments ,such as hospitals and healthcare facilities ,it too can make a patient appear sickly.
2. **Gray** is not a good color to use in large applications hospital for healthcare facilities ,because it appears cold and harsh.
3. Large expanses of **yellow** used in hospital patient areas can give patients a sickly pallor.

Restaurants

Restaurants

- The colors that used to [decorate your food service establishment](#) have a huge Unconsciously impact on customers, how long they spend in your operation, and how they feel.
- Colors can make the customers happy, boost their appetite, increase table turnover, and make your dining space seem more spacious. But, they can also have a **negative affect** on the customers.
- So it's important for the designers to understand how the interior color choices affect the designed restaurant's message.
- To do this, you first need to understand the psychology of colors and then learn how colors go together into a pleasing and complementary color scheme.

Restaurants

- Color is a major factor in our evaluation of the freshness, ripeness of food(food markting) .
- Experimental studies show that people's appetites are stimulated by viewing food under normal light.
- When colored light is substituted , unnatural food colors are produced ,such as dark gray meat or violet potatoes. Even though people know the food is edible , many are not particularly drawn to it.

Restaurants

Color wheel for apatite :

- Because various colors can affect the in different ways, they are powerful tools for shaping how the customers behave in a restaurant , so other studies done on appetite and found that color reveal certain trends to stimulate appetites ,by using (Appetite color wheel) .

- A brief summary of the Apatite color wheel and how this color wheel affect the customers and which types of establishments might utilize them:

Repels one from the thought of food

Increases blood pressure and heart rate, thus increasing hunger

STRONG STIMULANTS

Causes the appetite to diminish

Increases mental activity, reminds of healthy food, and makes one feel comfortable

Reminds of burnt or overdone food

Makes one very happy and energetic

SUPPRESSANTS

Associated with not-so-popular food: eggplant, red onions & purple cabbage

Brings in a feeling of healthy diet and abundance

MILD STIMULANTS

Calms the body, thus inducing sleep

Associated with being happy and carefree

Gray · Red · Orange · Yellow · Green · Turquoise · Blue · Purple · Brown · Black

COLOUR

Restaurants

- **In Appetite color wheel , we have 3 groups of colors :**

1.) **Strong Appetite Stimulants (Red , orange and yellow) :**

Color	Effect	Establishments That Use This Color
• **Red**	Red increases the customers' heart rates and can make them hungry. It can also make your guests eat quickly and leave, which is useful for increasing your table turnover rate.	Fast food restaurants, fast casual restaurants, establishments that want a high table turnover
• **Orange**	Orange makes people feel happy and cheerful. It's also excellent for establishments that serve desserts or unhealthy food because it makes people content and less likely to feel guilty for eating poorly.	Fast food restaurants, ice cream shops, casual eateries

STRONG STIMULANTS

Red

Orange

Yellow

G

OUR

- Increases blood pressure and heart rate, thus increasing hunger

- Increases mental activity, reminds of healthy food, and makes one feel comfortable

- Makes one very happy and energetic
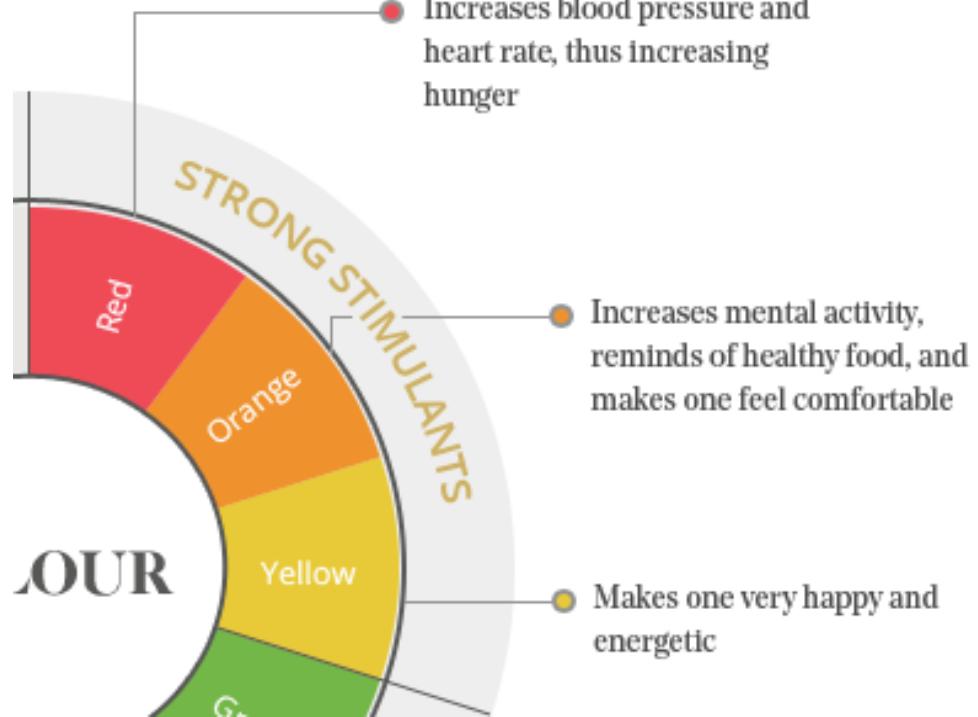
Restaurants

| Color	Effect	Establishments That Use This Color
• **yellow**	Some shades of bright yellow have a similar impact as orange, making people happy and content. Generally, yellow is very vibrant and exciting, so it's not an ideal choice for relaxed environments.	Fast casual restaurants, ethnic eateries, bistros, cafes

Restaurants

2.) Mild Appetite Stimulants(blue , turquoise):

Brings in a feeling of healthy diet and abundance

Associated with being happy and carefree

| Color	Effect	Establishments That Use This Color
• Green	Earthy tones like green are very relaxing and comforting. Green is found **commonly in nature**, making it an excellent choice for establishments that serve healthy and natural foods.	Health food stores, salad bars, vegetarian and vegan restaurants
• turquoise	Blue greens ,such as aqua and turquoise ,can be used successfully as backgrounds for food displays because their after image of red-orange enhances these colors.	Health food stores, salad bars, vegetarian and vegan restaurants

Restaurants

Green is the color of health and well-being. Most people think of green as something you can eat unlimited quantities of, without compromising your diet. It compliments the farm to table trend very well, and has positive connotations like fresh, organic, local, sustainable

Restaurants
3.) Appetite Suppressants:

Color	Effect	Establishments That Use This Color
• Blue and purple	colors that most restaurants should avoid. It's not commonly found naturally in food, and it can cause your customers to lose their appetites. Additionally, if you have bright blue walls, the shade of blue can reflect onto your food and make it look less appetizing. Blue reduces customers' appetites, but it makes them thirsty.	Bars, coffee shops, cafes, seaside restaurants

Repels one from the thought of food

Causes the appetite to diminish

Reminds of burnt or overdone food

Associated with not-so-popular food: eggplant, red onions & purple cabbage

Calms the body, thus inducing sleep

SUPPRESSANTS

Gray

Black

Brown

Purple

Blue

COLO

Restaurants

Color	Effect	Establishments That Use This Color
Black	use black strategically to make the other colors in the restaurant pop and look more vibrant, but too much black can make the space look cramped and dark.	bars, contemporary restaurants
Gray or white	This color gives your space a relaxed and leisurely feel. White can also make your dining area look clean, and it can make a small space seem larger. But, too much white or gray can make the dining area look sterile.	Small restaurants and bistros, upscale eateries, banquet halls, wedding venues
Brown	Brown is an earthy color that helps guests relax and feel comfortable. It can also give customers a sense of support and stability, and it can even convince guests to come back as repeat customers.	Coffee shops, bistros, contemporary restaurants, bars

Restaurants

Brown: can also be associated with health food but is also often used by coffee shops and contemporary eateries. It helps guests relax and feel more comfortable.

Black is best used as an accent to make other colors pop and is usually, like blue and purple, found in bars and nightclubs in addition to contemporary restaurants.
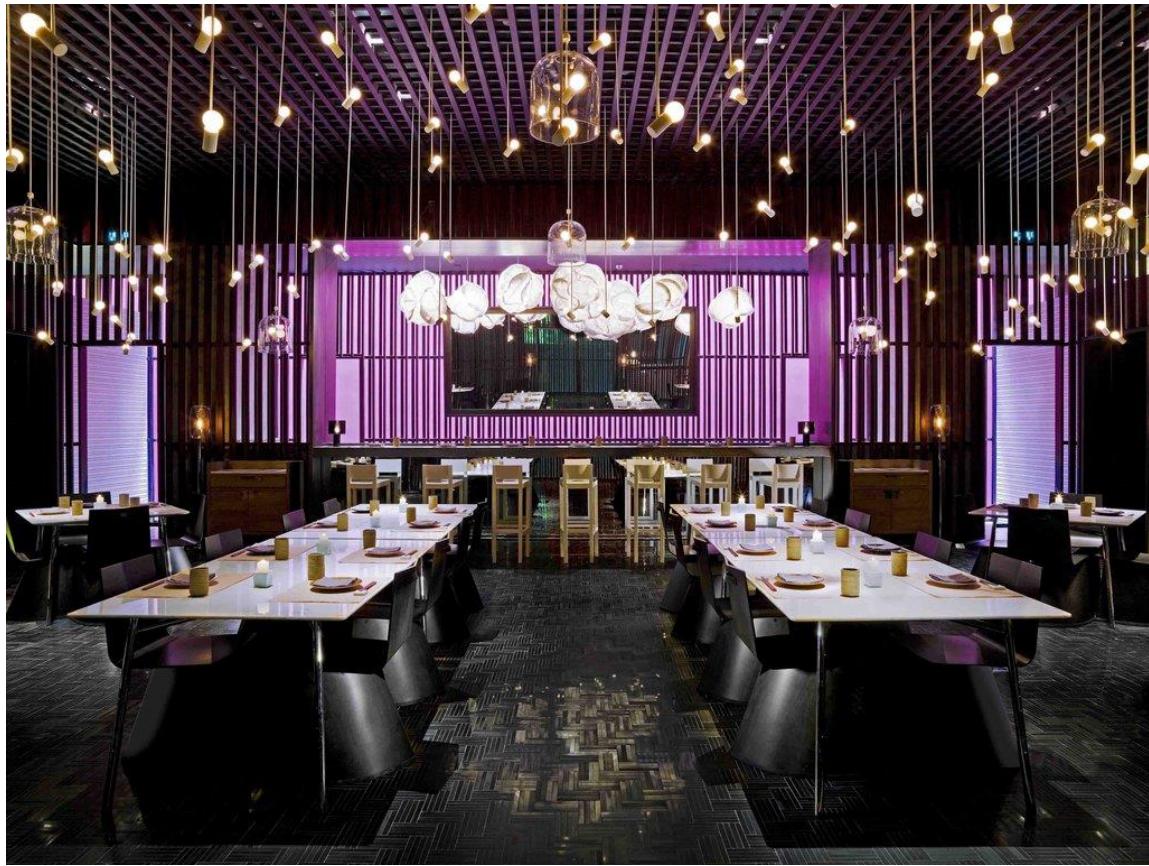
Retail

Retail

- **Colors are a necessity to liven a place up. The variety of colors used plays a large factor in determining a store's environment.**
- **Color can also be an important element in the marketing and selling of merchandise (goods).**

A store incorporating a variety of colors to induce a fun atmosphere and delightful imagination that appeal to young teenage shoppers

Retail

- Colors not only help set a mood to influence shopper's behaviors, but they can also support in the sales of products. In other words, based on the type of merchandise being sold, the choice of colors used in the interior design can help sell those products.
- Wall color is also very important, and should use the right color to allow items in the store to look appealing, but not in a way that the items need to compete with each other. When uncertain, it is better to have the setting appear neutral rather than bright in most cases.
- In addition, using the right colors surrounding your products can also help draw in the right crowd.

Retail

- For example, the use of warm colors such as red and yellow, will help create arousal in the store atmosphere.
- where as earth tones are often used for subtler product messages.
- Brighter hues are often used for store shopping bags to assist in image making and ease of purchasing.

Retail-clothing company, H&M, tends to corporate colors in a way that creates a warm and nice atmosphere to attract their young customers.

Thank you