

COLOUR IN AND AROUND HOMES

by

A. REISCHL

Department of House Design, Technical University, Budapest

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Introduction

Unlike physics, architecture does not approach colour upon the basis of definite wavelengths of propagation. The aesthetic and purposeful colour schemes for rooms, buildings and residential units call for a many-sided examination of the effects of colours and colour compositions on man and makes use of applied colour psychology.

The colour preferences of today's man in the street reflect a confused mixture of the old, traditional and often obsolete customs and the "fashionable" composition of colours, that changes so capriciously. And these preferences stem more often than not from a desire to draw attention to himself, to cause sensation and to startle his neighbour. This trend may, of course, be interpreted as a distorted form of emphasis on individuality as against being submerged in the masses. Yet the theory and psychology of colour have made a remarkable progress since Goethe and a great number of scientific discoveries have helped us to a better understanding of the nature of colour, its interrelations and the problems of colour harmony and colour dynamics. To mention but one example, think of the discovery and generalization of relativity. If we say, for example, that green and blue do not go together, we are right if we put them side by side on the same surface and in the same medium. But nobody will ever experience disharmony in seeing a green meadow and the blue sky. To demonstrate the truth of the theory of relativity in colour compositions here is another example: red, white and blue arranged in this order are most effective in the Tricolor. Should we apply the same colours in a room, for instance, making the ceiling red and the floor blue, with white walls between them, the components would disintegrate in their effect, creating an unpleasant impression. This composition of colours in the form of say, blue sky, white landscape and red soil would be most perplexing in nature, too. At the same time as a spotted or striped pattern for a dress or curtain, red, white and blue may be most attractive.

On the other hand colours that make a room most pleasant — brown floor, light green walls and ivory ceiling — would not be animating on a banner.

In nature, a greenish-white sky, green land and brown rocks depress the spectator rather than recall the informal intimacy of a room.

The recent principles and ideas for the colour schemes of flats and residential units will be outlined in the following.

1. The colour schemes for flats

1.1 Colours in the home as reflection of the personality

A flat is a group of definite rooms which serve as the home of a family or of adults needing a household of their own. A flat becomes a home only if it can offer personal and undisturbed privacy and permit social life at home, either with visitors or the family itself, to each member of the family, adults and children, young and old alike. A flat as it stands, its facilities and furniture reflect the outlook, behaviour, mental-material demands and possibilities, in short the entire way of life of its occupants. A flat is the most suitable group of rooms to reflect personality.

The question inevitably arises how personality can prevail in tens of thousands of flats of the same size and plan. Differences present themselves in the purpose to which the rooms are put and to a smaller extent by their furniture, although utility types are so widespread that personality is reflected more by an unusual grouping of the furniture, and by carpets, curtains, pictures, indoor plants, etc.

In addition to the shape of the rooms, furniture and equipment, the general impression of a home is also made up of colour. The colour schemes of rooms, offices, furniture and decoration and the harmony of matching or contrasting colours are means of expressing the personality. The colour scheme of a flat also makes it characteristic.

The first thing to elucidate is the relationship between colour and man, according to personality, age, sex, attitude, etc.

It has been proved by various types of colour tests that people react to colour in a way characteristic of their personality. In a given situation the majority of people have a preference for a single colour, their preference colour. Most people are characterized by a given individual scale of colours and as certain physical or mental effects cause this individual colour scale to change, it may be considered as an expression of the personality. Colour preference tests used today in the description of character are more precise than graphology analyses.

Colour preferences change as the individual grows older. Children before school age show a special preference for red. This is followed by a slow process of alteration till the adult comes to prefer blue, putting red in second place. Children — unlike adults — prefer intensive

colours, while old age tends towards colours with grey shades and pastel tones. Hungarian peasant costumes give a convincing illustration of this fact. Young people, especially girls, wear gay, richly decorated costumes. Grown-ups and married people dress much more simply with a dominance of pastel shades while old people show a definite preference for greyish-black apparel. The right combination of black and white is still considered smart and dignified for men's Sunday best, irrespective of their age.

It has been found that most people like red and blue the best, with red as the most attractive colour. The usual colour preference list is: blue — red — green — yellow — orange — violet — brown (the last three have equal preferences), pastel colours — grey — black — white.

It goes without saying that people are biased in their colour preferences by inner and outer circumstances. Thus, for example, people who are unwell, who have a headache or a temperature perceive colours generally duller than a healthy man does — glaring orange-red seems more yellowish than usual. Someone who is overstrained finds red has a more irritating effect than when he is in a calm and balanced state. In some cases the effect of colours may be considerably modified by other, concomitant sensations like the coarse or slimy touch of the material or even its raw or repellent smell.

The appreciation of colour may also be affected by the degree, character and duration of other stresses to which people are often exposed such as the noise of the surroundings.

Our hearing links sound with colour. We talk about "loud" or even "screaming" colours or about "low" and "reticent" ones. Green surroundings generally suppress noise because the greater the noise the better the sensitivity of the human optic nerves to the colour green. In noisy rooms "loud" colours are ineffective and preference is given to "quieter" ones, like green and blue. When there is silence, bright orange gives a much brighter and more yellow effect than it really is.

The estimation of colour may also be connected with the individual's experiences of taste. If a child is given green honey sweet, he will be as disappointed upon tasting it as if he had been offered golden mint. According to his experience sweet as honey means golden yellow, while a mint is generally green.

The human's sense of temperature may also be influenced by colour. People in a bluish-green or blue room feel that it is 3—4 degrees cooler than in a similar room painted orange or ochre. People of "hot" temperament may be easily chilled down by cold colours. This is also true the other way round: cool and restrained people may be warmed up by warm and fiery colours.

The sense of weight has an influence on the sense of colours, too. Light blue air and light yellow white clouds give these colours — white, light blue and light yellow — not only a sense of cleanness but also ethereal grace, while the ochre and brown of earth, just as the dark blue and black of the sea give a sensation of being heavy colours. Similarly, it is the green of meadows and woods that has made it the colour of silence and peace, while the sands of the desert are associated with neutral monotony.

When the question of colour is raised, people's "inner preferential colours" must always be observed. All these should, of course, be completed with the characteristics of individual and group psychology. Thus, for example, in a home, the individual colour scale of the housewife is decisive in the colour scheme of her bedroom and dressing room as well as the kitchen, while the dining room and sitting room should reflect the colour preferences of the whole family. The colour schemes for rooms of common use depend on the measure and character of the family's social life, the frequency of visitors, whether the visitors are always the same people or not, whether the family leads a rather retired, introverted life, etc.

1.2 Light and colour in the home

“Colour is the child and passion of light”^{*}
Goethe

It is through light that everything becomes visible, perceptible, comprehensible and measurable for the human eye.

A characteristic feature of modern architecture is an enhanced application of light effects. This is why contemporary architecture is often spoken about as the architecture of light.

Any architectural space or room will only become directly perceptible for man with the help of light. It is through our eyes that we get reliable information on the size of rooms, their shape, furniture and arrangement. All this needs light. Our ability of recognition is a function of the quantity and quality of light. At dusk, the contours of rooms are lost, while in full light everything becomes visible and springs to life in the contrast of light and dark.

Light of different intensity but of the right tone produces different colours, “dark” being the attribute of dusk and “light” of full light. A spectator moving between the lighter and darker parts of a room will have the sensation of incessantly changing light and colour. The ability of the human eye to distinguish colour enables the individual to have a more realistic and more detailed impression of his surroundings. While darkness is specific for black, green and blue light is a property of white, yellow and red.

Different light results in different colour and looking at it from the point of view of a room, it is easy to realize that “colour is a function of light and light a function of colour”.

The apparent colour of room surfaces (ceiling, walls, floor) and furniture is a function of the light source that illuminates the room. The source of natural light entering a room is usually a window. This role of a window is well interpreted by its Greek name *photagogos* meaning the bearer of light. Natural illumination in a room, i.e. the quantity and quality of natural light entering it, depends on the orientation, dimensions, situation and screening of the window.

The quantity and quality of light entering a room greatly depends on the given season. In summer, maximum light intensity and glare necessitate a reduction of the coming sunlight and a more uniform quality of light (by the use of curtains). It is general experience that in the strong glare of the midday hours, colours tend to merge, becoming almost bleached. Light intensity is at a minimum in winter as sunshine is rather scarce but enters south-facing rooms in oblique rays, making the rich gamut of colours more conspicuous. The play of light in the changing seasons of spring and autumn produces

* Goethe: Farben sind Taten und Leiden des Lichts.

a variety of light effects. Modern architecture takes all this into account when striving to design vitreous surfaces for rooms used in daytime and to apply facilities such as blinds, curtains, shades, awnings, terraces etc. to maintain a pleasant illumination in all seasons by altering the window area, to regulate direct sunshine and distribute the light uniformly.

Transparent, plain glass has no effect on the colour of light it transmits. White translucent glass disperses light, making the illumination of the room more uniform. Light passing through yellow or orange glass seems warmer, while ruby glass gives it a fiery gloom and it will become mysteriously grey when shining through violet or blue. Sunshine passing through bluish-green glass gives the impression of sparkling, unapproachable iciness, while yellow-green glass blurs shapes and contours.

Light brings colours to life, making any illuminated surface a playground for colours. An illuminated wall reflects its light onto the opposite wall, the ceiling to the floor and the walls, etc. involving every element in the play of light and colour.

A particular colour has a different effect on the surfaces of various materials and finish. For example, the effect of a certain colour will differ when applied to polished or matt, smooth or coarse, grooved or woolly surfaces, to plaster, stone, concrete, metal or wood, etc. Thus, for instance, the sight of overpolished reflecting surfaces becomes intolerable after a while. This is why the surfaces of walls, doors and wardrobes are generally matt or silky matt. Then, there are colours that by their nature conjure up certain associations. Warm yellow and brownish oil-painted surfaces have a repellent shiny and greasy effect since we always identify them with the pale, dull colours of earth, stones and sand. Oil painted surfaces should be kept to a lighter, bluish shade as found in nature, on shiny green leaves for instance. Alternatively, velvet, with its light-absorbing surface, is attractive in black, dark violet or purple as it enhances the depth and mystery of these colours. Silk, on the other hand, with its smooth and shiny surface makes every colour brighter, more vivid or even gaudy. Black silk will never give the impression of the dull depth of black but rather its sparkle. At the same time, raw and bright red or yellow silk may become unpleasantly gaudy and may be best in pastel shades.

1.3 The harmony of colour in the home

All theories on the harmony of colour suggest that the problem may be solved by some unique method. Great is the disappointment of people who try to build up the colour harmony of a home or even a single room by some mathematical or mechanical formula. Colours are never in harmony with and for themselves but always with a definite third object. This object is primarily the man himself, who lives in the room and uses it. It may also be



Vaulted anteroom with whitewashed walls, dark door and warm coloured brick floor making a general romantic impression

nothing but the well-defined purpose of the room. Harmony always means relationship. Although no rules can be laid down on the concert of colours, neither can it be said that a consonant composition of the colours of a room depends on good taste alone and on artistic sense. It depends much more on the nature of the colours themselves, the relationships of the room concerned and the furniture in it, creating harmony by consonance or contrast.

Man sees and senses the parts of a room in different ways and thus they have various effects on him. People in a room generally have only a superficial cognizance of the ceiling, although they notice the walls, but not all parts with the same intensity. They will pay less attention to parts of walls above the eyeline than below. If one considers that people are indifferent to a checkerboard pattern on the floor while the same pattern on the wall may intimidate them by its "grid" effect and leave them with a persisting uneasiness for a time after leaving the room, it will become clear how differently the parts of a room are observed and what different impressions they raise.

The walls in a flat may be of some plain colour (white, or any colour, neutral or otherwise characteristic of the room or chosen by "individual" preference), a solid colour with white accessory surfaces, contrasting or complementary colours, or with matching coloured surfaces.

The most ancient and most characteristic of plain walls are whitewashed ones. A room, however, which has glaring white on all its surfaces — walls, ceiling, floor and doors alike — recalls the rigidity of a prison or the crypt of eternal mortality, just like totally black spaces do. This impression is dissolved and the room is made more human, cosy and warm by the application of a dark floor (brick or wood), a timbered ceiling, or dark doors and window-frames. White, as a neutral, clear colour is a pleasant overall base for coloured furniture, curtains, cushions and wall hangings and it underlines the colour effect of plants and flowers in the room. Minor coloured surfaces in such rooms will become more lively and flourish against the white background, and being reflected by white, they become richer and offer a play of colours. White is a neutral colour that is practically always coloured by various lights it reflects. Whitewashed walls coupled with dark ceiling, floor, windows and doors give an inevitably romantic impression. As the most ancient colour scheme for a country home, it makes urban people nostalgic for life close to nature. This is why it becomes more effectively contradictory and stagey when removed from nature and applied in a dreary artificial environment. Walls of a clear white are strange in a home on the eleventh floor of a block of flats where little has been left from the richness of the reciprocal colour effects of nature. Thus the patches of furniture, carpets, curtains etc. together with the white walls seem to be rather sophisticated here. The colour-enriching play of white walls may, on the other hand, unite in good harmony on the first or second floor of a house, especially if it is situated in a wood or garden.

In urban homes, where the connection with nature is rather restricted,

a preference is shown for plain walls in various hues of white blended with other colours. True, the brightness of white gets lost in this way but the basic effect of the colour added to white gives it a new character. White blended with blue is less delimited, cooler and more exclusive, while blended with green it is more definite, relaxing and balanced, and white blended with yellow has a warmer, gayer, more serene effect. Care should be taken that blended colours on the walls of a home should never seem dirty, but preserve in their tonality the clean effect of white. The walls of a room may be kept to a single pastel or may be white blended with different colours. It is usual to have the main parts of a flat — rooms, hall, dining room etc. — the same shade of ivory or blended to a pastel ochre, while the other rooms are generally pure white. This will keep the home neutral and yet warm in its colour effect, and with this basically homely atmosphere, all we have to do is to take care of the colour harmony of the furniture, carpets, curtains, etc. — in short, interior decoration. This is why it is reasonable to use the same pastel shade for the walls of all the rooms, especially in prefabricated homes.

If there is a chance of selecting the pastel colour for a homogeneous home, the “preferred” colour of the family or its “speaker” will probably be used.

The colour effect of the home is richer when the pastel shades of the rooms are varied. This will also underline the actual use of the room and allow for the individual tastes of the family members. It has become an almost general rule that light green walls have a soothing, relaxing effect in bedrooms; while dining rooms and sitting rooms are often yellow-brownish pastel shades, as they make one feel gay and cosy. The walls of studies and conference rooms are better in blue or greenish-blue shades, as an expression of common sense and levelheadedness. Naturally, it is reasonable in such cases to adapt the interior decoration of a room to the character defined by the colour of the walls.

The colour effect will be different in rooms painted a plain colour, without being blended with white. In a plain space neutral illumination will become the complementary colour of the room. Thus, for instance, in a red room white light has the effect of being green. This is because the optic nerves grow tired of colour effects that are too one-sided, and as a defense, project the complementary colours. This is why, on leaving a red room after being there for a while — when it has already become almost colourless — everything seems green. This is a protest against the one-sided colour effect, which Goethe called “enforced colour”.

The case is different in plain coloured rooms with white accessory surfaces. Take, for example, red walls and a white ceiling. The eyes protest against so much red by projecting the colour green, and as a result the white ceiling appears as if it were shaded with green. White walls look grey when the



Furniture, coloured textiles and richly carved frame are beautifully accentuated against the white walls and ceiling

protest colour appears. People will become paler as the red on their cheeks fades from the effect of the protest colour.

The colour combination of white ceiling and red walls is always more impressive than that of a white ceiling with blue walls, although putting blue with white is more characteristic than red and white which is never very distinctive. Blue and white are cool, heartless and unemotional while red and white make you feel fidgety and excited even when applied in a pleasant proportion. Yellow and white present a brilliant clarity by the closely related emotions they arouse, and so complement each other well; in a composition of green and white, the cold matter-of-factness of white gives good reciprocity with the warmth and intimacy of green.

In the vicinity of intensive colours, extensive white surfaces — white ceiling, door and walls — generally give the impression of emptiness. Thus, for example, in a white kitchen, green and white is a good composition of colours but it is better if the furniture is green and the walls are white rather than in the other way round because in the latter case the effect of white with its rigid, clean emptiness will dominate, while in the former the intimacy of green will assert itself. The same cannot be said about red. Even a small portion of red will be conspicuous and exciting, therefore it is reasonable to apply it only on smaller surfaces of the blended white kitchen furniture such as frames, buttons, buffers, pulls, etc.

Complementary colours in a room mutually enhance the effect of the other but the two colours should not be used in the same proportion — as to area, position and intensity — or else they will compete with each other, making the spectator feel uneasy. Complementary colours are well applied in such pieces of decoration as carpets, curtains etc. For example, it is a good solution to put red furniture against greenish-blue walls or on moss-green carpets. This opposition of colours will activate the pieces of furniture and invite one to sit down. The same colour scheme may be used the other way round by arranging chairs upholstered in green on a red carpet. In this case the red will seem darker, more brownly, and will accentuate the green of the chairs, suggesting peaceful relaxation in a rather exciting atmosphere.

Differences in the psychological effect of colours have an impact on the nature of complementary colours. Thus, if we put blue chairs in yellow surroundings, or vice versa, the contradiction is a less concrete one than in the case of green and red. At the same time, larger blue surfaces may be set against yellow ones without evoking the disquieting rivalry of red and green. The lightness of yellow and the coolness of blue are related in their equitableness and emphasize mobility without the tension of contradiction. This is why the complementary colours blue and yellow find ample application in the communicating rooms in homes, such as entrance halls, anterooms, passages, etc. Care must be taken, however, of the proportions and situation of the

two colours; the impression made by blue walls and yellow ceiling differ from that made by a blue ceiling with yellow walls. The effect of complementary colours is basically dependent on their hue, intensity and purity, or just on the contrary, on their mixed or blended nature. While green or blue are all



Reading corner: walls in light pastel help to emphasize the coloured furniture and other objects

right if they become greyish, yellow approaching ochre will gradually lose its light and clear ease, and recalls the ponderosity of earth.

Blue and red do not take opposite peaks on the colour chart and yet count as important opponents in a colour composition. Combining a fine bluish-grey and terracotta creates a rather pleasant effect. Fiery orange and cold blue, on the other hand, produce a contradiction that is difficult to bear, and tends to be sentimental.

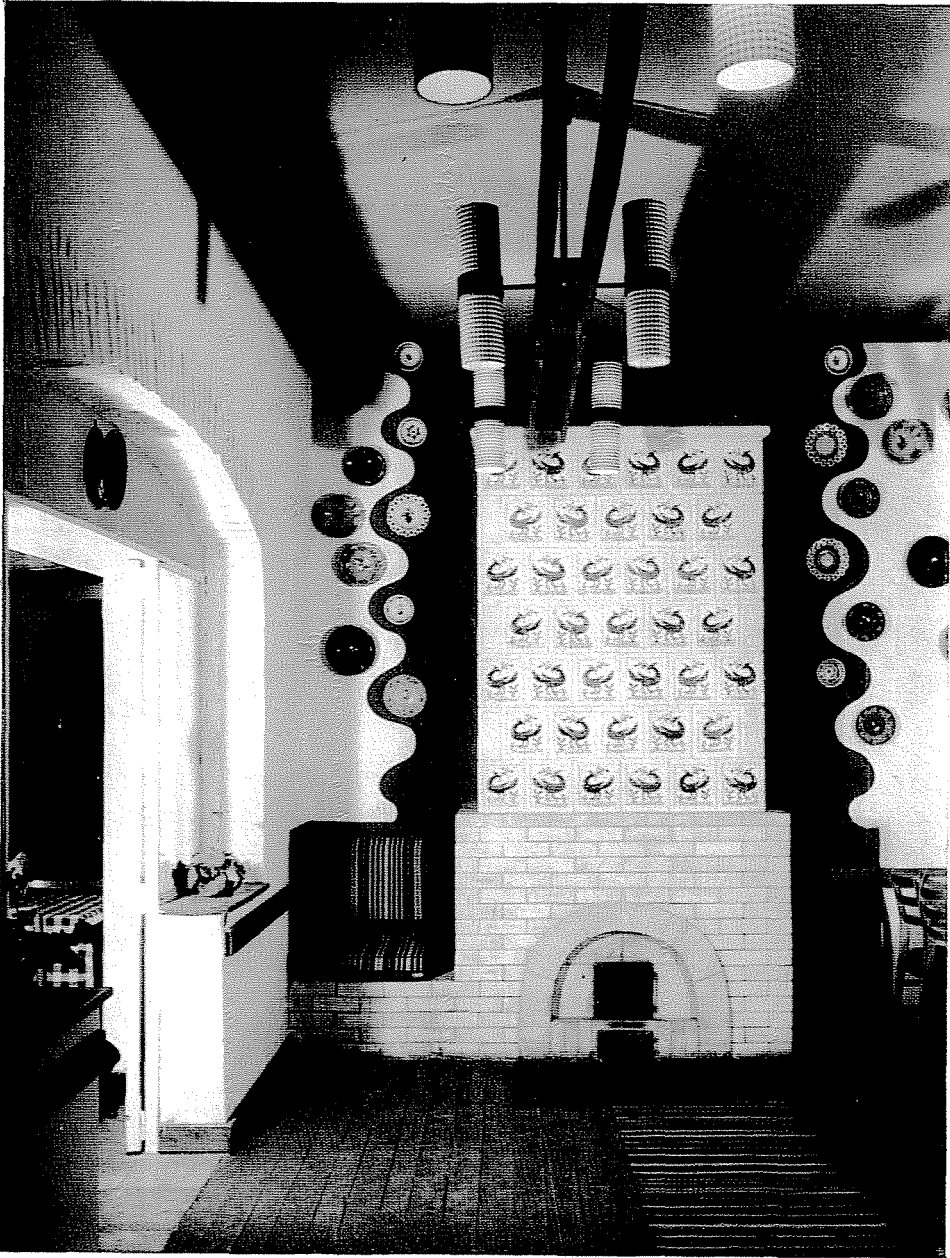
The right proportion of light blue and orange recalls the sun setting against a blue sky. If, however, orange is blended with ochre or brown the flaming atmosphere of the setting sun will become heavily earthen. Rooms of a raw red and blue colour composition result in violet, that causes the unpleasant feeling of intellectual strain.

So, when applying complementary colours, it is advisable not to combine them directly but in somewhat different hues; a pleasant colour scheme of complementary colours depends on both the hue, tonality and mixture, and the relative area and position.

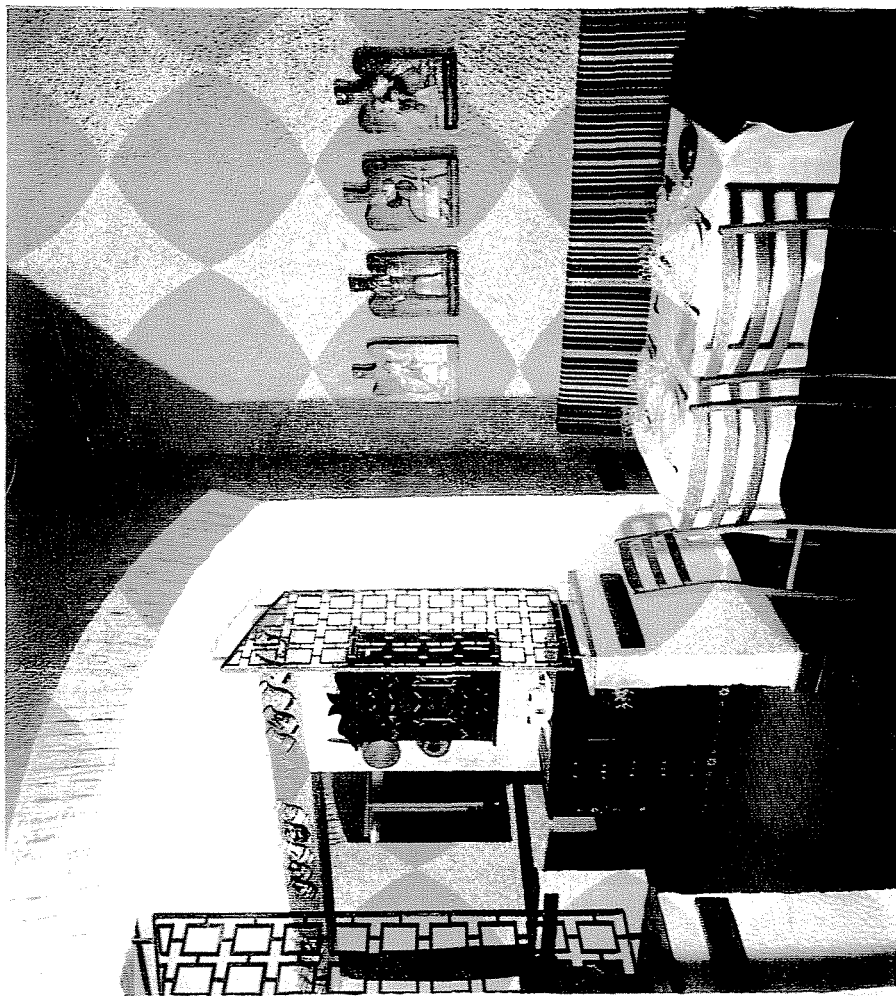
Now let us consider rooms with related colour surfaces. Related colours are those akin in their psychological effect. Most of them are adjacent on the colour chart, like yellow and green, yellow and orange, or blue and green, but they may also be spaced apart like orange and green, yellow and red, etc. While complementary colours generally enhance the overall effect by accentuating each other through contrast, related colours strengthen the effect either dynamically by their consonance or dramatically by the tension of their contradiction. Let us take a room of green walls and a white ceiling. The firm poise of green in this composition is only made pale, and is disturbed by white. The white ceiling evokes a sense of void, and — in the best case — it will seem pink, (the after image) as a protest against the effect of green.

If, however, green is combined with yellow instead of white, the room will have a definite active and luminous effect. Naturally, if the yellow is made heavy by adding one of the earth colours (ochre, brown, grey) or red, the resulting combination will suggest the colour effect of autumn and ripe fruit. The combination of green and ochre (brownish-yellow, greyish-yellow) results in an intellectual effect, appealing to reason, and will fit well into the mood of a study or schoolroom; the pair green and warm yellow arouses the dominance of hygiene and is more suitable for use in wards. From this it is clear that the slightest differences, and the finest shades affect the tonality of colours.

A room with orange walls and a yellow ceiling has the warm effect of sunshine. In a space of such a predominately warm effect, the spectator will see blue colours (in protest) but in the absence of neutral (white) surfaces they do not become manifest. The warm effect is not neutralized but retained as an experience. Similarly, in rooms with white walls and a light blue ceiling,



Colours give a special stress to the mantelpiece: claret and blue as contrast colours accentuate each other in the overall effect: the dark ceiling makes the room look lower and more homogeneous



The dining area of the sitting room is made more intimate by the warmer tone and roughness of the walls

which have a predominately cold effect, the sensation of cold becomes so one-sided that it does not permit the development of orange as a protest colour, or even where the ceiling is painted light yellow instead of white, the ceiling is separate from the warmth-absorbing surfaces, i.e. the walls. Orange, as a protest effect against blue will only develop with blue and yellow walls, but in that case there is no "sensation of cold" any more.

It is common knowledge that of all the colours, red is the most active, green the most passive, yellow the lightest, violet the heaviest, orange the warmest, blue the coldest, purple the most superb and grass-green (yellowish-green) the humblest. Again, distinction is made between light colours (yellow, orange, yellowish-green) and dark ones (blue, violet, purple).

A room may seem even cooler upon the transition from blue, greenish-blue to white. On the other hand, tension will be increased by passing from ochre walls upwards to a terracotta ceiling. The concentrating effect of the stronger colour of the ceiling is especially forceful when the walls are considerably lighter, grey or greenish tones. Its concentrating effect prevails primarily in rooms whose main function is to group people engaged in a common activity around a table (dining rooms, conference and card rooms, etc.)

As blue and green are passive colours they can never create a tension like the most active pair of colours: red and yellow. This deviation does not originate in the fact that blue and green are adjacent on the chart while yellow and red have orange between them, but exclusively in the fundamental nature of these pairs of colours. A characteristic effect of the pair blue and green can only be obtained by using colour transition, as for example, in a room where the innermost part with the poorest illumination is blue changing gradually to green to dissolve fully into yellow at the windows. Colour transition has special advantages in single-space flats which do not consist of rectangular rooms delimited by walls but of a row of interconnected spaces with distinct functions. Colour transition should always follow the ascending or descending order of the colour scale, beginning, for instance, with white near the windows where natural illumination is at its best, and gradually applying increasingly vivid colours towards the gloomy depths of the room.

Orange and green as a pair of colours have a special significance in the colour schemes of rooms. Their effect mingles to a yellowish colour in light and to yellowish-brown in pigment. This is why in a room of orange and green, the colour effect of pure blue and the protest colour of yellowish-brown — expressing intellect and lucidity — prevail. In this respect the pair orange and green is better than yellow alone, its brilliant grace being achieved by involving the pleasantness of orange and green (apricots and the delicate green of leaves). Orange and pure green together are applied to advantage in dining rooms and other community rooms.

This shows that the use of related colours is a clever means to give rooms a more expressive character. The common effect of related colours varies with

their particular relations: red against orange means condensation, while orange against red dilution; green against yellow represents a commonplace reality while yellow against green is an expression of relaxed carelessness etc. Related colours produce an intermediate mixed colour; the weaker its protest colour the better the effect.

Gold and bluish violet give the impression of solemnity, because their intermediate colour is purple, with humble green as the protest colour, and this raises the effect of the bluish-purple colour ensemble to the highest degree of solemnity. The intermediate colour of the pair lemon and blue is green, whose warmth is due to purple being the protest colour. Rooms in this colour scheme no longer give an impression of solemnity, but of dynamic force.

The texture and colour of the floor also play a role in the colour effect of a room. Mechanically repeating patterns that are dull and flat on walls, are widely acceptable on the floor or even on the ceiling. The right articulation of the floor, for example the application of stripes, will make the room seem longer or shorter than it actually is. In rooms and other room-sized areas, over-articulation and division of the floor is a disadvantage. It is a mistake to overestimate the importance of the floor and to imagine that a coloured and richly patterned floor would enhance the colour effect of the room. Richly articulated floors in contrasting colours call for more intensive colours on the walls than do floors of moderate, uniform colour. With matt floors made of a natural material like stone or wood, the walls may be a heavier colour than with highly-polished floors. In a room with a parquet floor and walls painted a Pompeian red, the wall colour will be more effective than with a black and white floor. Black and white chequerboard floors do not go with pastel pink or pastel green either.

Floors should always suggest by their colour firmness of earth and safety of step. They should never be sky-blue or light yellow. Light blue is associated with the endless sky, water or slippery ice, while light yellow conjures up memories of wading unsteadily through sand. The darker tones of a colour will make walking across a floor seem safer than lighter shades would. A pink floor, for example, seems less safe than a red one.

Pure, strong colours of a carpet have a good effect, especially when their material and texture contrasts with the floor. Plain carpets, on the other hand, should be kept to greyish, moderate tones.

As far as the use of friezes or footing to finish off a painted wall is concerned, it may be said that it is better not to divide the walls into horizontal zones. Keeping the paintwork from going to the ceiling is a good idea for flats in old houses where the rooms are very high, to reduce an unpleasant impression, to emphasize a dark ceiling, or to separate two colours with opposite effects with an equalizing intermediary colour. Thus for example, a pink



Smart homeliness results from grey floor and ceiling, light orange walls and white-and-red furniture

ceiling and apple-green walls must not be brought into direct contact but have a separating strip of pale yellow between them. In modern flats it is advisable to take the colour and texture of the walls right to the ceiling, otherwise they reduce the headroom which is low enough without that; large rooms may look higher if the colour of the walls is taken right up to the curved part where the walls and ceiling meet.

Footing is required mostly where the walls need protection. In the psychological sense, footing means delimitation, privacy and protection. It is advisable to keep the footing the same colour as the walls or to select a slightly darker or greyer hue of the same colour, even if of a different material. Should the colours differ, however, the most suitable colour for a footing is the darker and heavier one next to the wall colour on the colour scale.

Footing may cause some difficulties where the rooms are low, as it may lower them still further. Care should be taken of the relationship between footing and the eye level of a sitting man, lest too high a footing should make him feel "drowned". It is advisable to bring the footing up to the ceiling in the case of bathroom tiling, for example.

The psychological effect of footing is of special importance in homes. Dining room, study, bedrooms, reading, needlework and card corners, etc. are parts of the living space that need enhanced delimitation and intimacy. In such cases the warmth of wainscoting is suggested.

In communication rooms (entry, anteroom, corridor) the footing should not be clumsy and brownish earthen in its colour but a light shade of blue or green, as the latter recall ease, mobility, airiness.

The colour of doors plays an important part in the psychological effect of homes. Depending on their colour, doors may make a room seem more spacious and accessible or, just the contrary, more confined. Doors should be concealed and kept the same colour as the walls only if they would disturb the peace and harmony of the room. The colour of the doors should match those of the ceiling and floor. It is a good idea to select for the doors a darker version of the colour of the ceiling. Dark and warm-coloured doors are more intimate than cold, light ones, which seem to invite one to open them and look out. For special emphasis, doors may be the opposite colour of the walls in either blended or pure colours, and the character of the door may be underlined by framing it in a contrasting colour, for example dark doors with a light frame or vice versa. Intensively coloured rooms, however, must not be made tastelessly overcoloured by adding a further colour on the doors.

If, for example, we have an English vermilion ceiling, pearl-grey walls and dark grey floor edged in white, no further colour — say green — could be added without interfering with the uniform atmosphere of the place. In this case the door may be red (to match the ceiling) or dark grey (a darker hue of the walls) or even both applied in the form of panel and frame (dark grey door panel with red framing or the other way round). Similarly, a room with a yellowish ceiling, green walls and brownish-red floor should have doors in one of the hues of the ceiling and floor. As we have seen, the psychological effect of door colours plays no small part in the colour scheme of rooms. It

has, however, a special importance in nurseries, since children have a reaction keen to colour effects, so use could be made of gorgeous, fairy-tale doors.

Door panels, closets and wainscoting will make a homelier impression with a matt or dull, silky finish than a high-polished one. Highly polished doors are more disturbing in a living room than in communication rooms and offices.

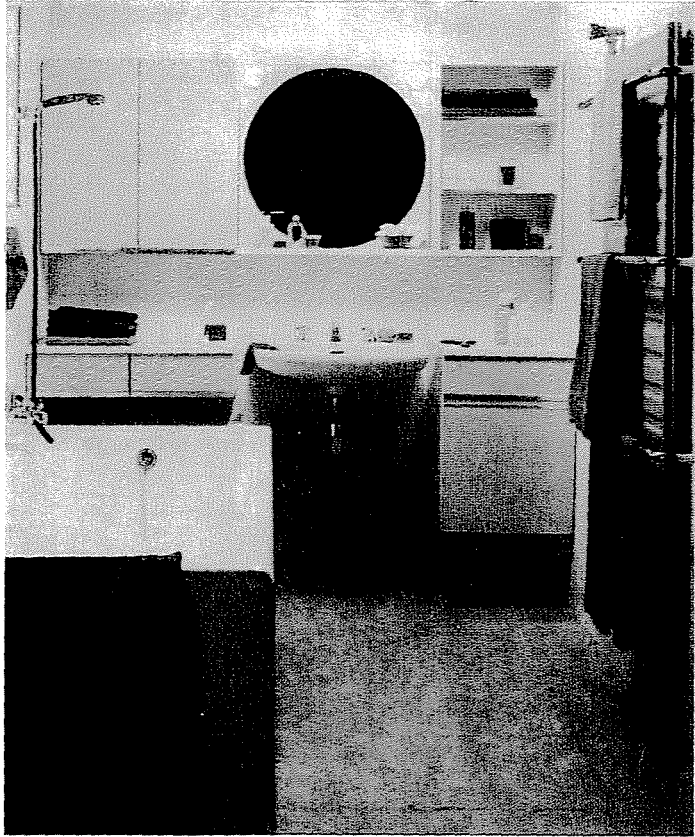


Playful coloured nursery where red, small children's favourite, prevails

Furniture plays an important role in the colour effect of a home. In addition to the traditional furniture with a wooden frame and woollen fabric, much use is now made of furniture combining metal and plastics, or only of the latter. This new type of furniture is not only more independent in form (shell, grid etc.) but is also richer in colour. The gay colours of plastic furniture have had an effect on wooden furniture, which is now often painted and polished. This, of course, lends additional importance to the colour of furniture in the colour scheme of a room.

Some people are content to buy complete sets of furniture, entire suites, aiming, in the best case, at an inner harmony of colours. People of more individual taste prefer to compose the ensemble of furniture and decoration in their home from individual pieces or small groups, taking into account the reciprocal effect of forms and colours, their consonance or the vibration caused by their contrast.

In every room in a house there is a main piece of furniture, a group or the whole furnishing, — depending on the function, — that determines the colour effect of walls, ceilings, floors and doors. Take, for example, the chairs,



The paleness of a white bathroom is offset by an accent on dark components, coloured floor and textiles

tables and armchairs as well as the carpet in the living room; the couches and casings, or beds and covers in the bedrooms, which, by their position, play a role in the colour effect similar to that of carpets in the other rooms; the chest of toys, bed, panels and carpet in the nursery; wardrobe, the built-in clothes closet and the hat-and-coat rack in the anteroom; the table and the chairs, possibly also the panelling in the dining room or dining area, the kitchen fittings; and the toilet and bathroom equipment; all these and their colour relations with the walls and floor are decisive in the overall colour effect. In

deciding upon the colours of the furniture the main piece or group of furniture should be considered first, while the other pieces of minor importance only add gay patches to it. Coloured furniture, often decorated with childish figures,



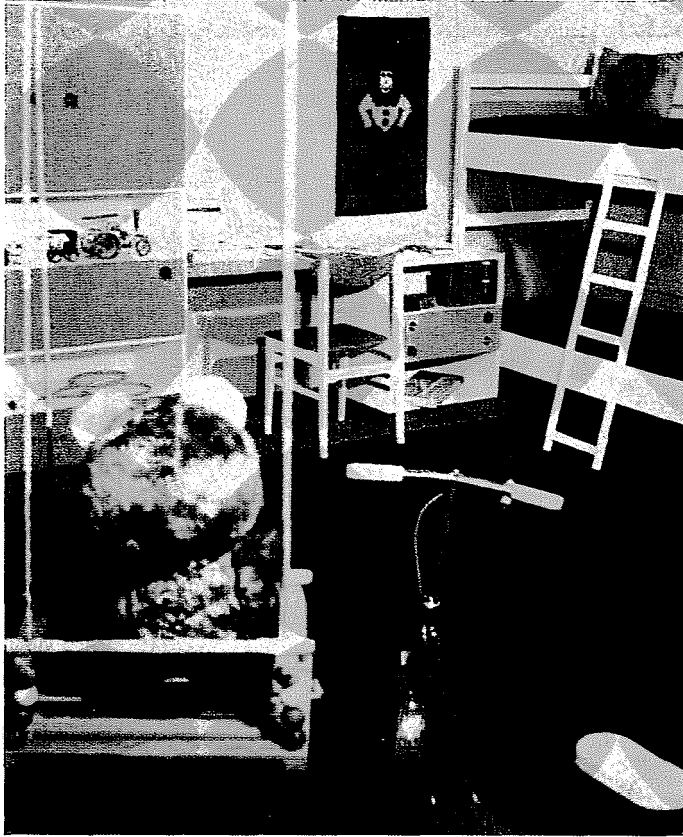
Dark walls enhance the appearance of white doors and ceiling

play a special role in making nurseries reflect an atmosphere of gaiety and playfulness.

Our views on curtains and casings as not negligible elements of a room are far from being settled. In a room that makes a general impression of being white, curtains of any gay pattern may be applied. The selection of curtains of the right texture and colour in rooms with coloured ceilings and walls is a much more delicate problem. The curtains may be a mixture of the colours of the ceiling and walls, but somewhat nearer to the colour of the ceiling. Thus, for instance, strong, copper red curtains go well with light pastel orange walls.

1.4 Colour effects in rooms with artificial illumination

A plain white surface will change colour according to the colour and intensity (full, oblique, reflected) of the light falling on it. The closer the original colour of the surface to white, the stronger the effect of the coloured light projected on it. A room seems warmer and more lively in yellow illumination but will give the impression of being cool and grey in a bluish-green light.



The grey walls, deep blue floor and ceiling of the nursery are made lively and gay by orange surfaces bordered in white

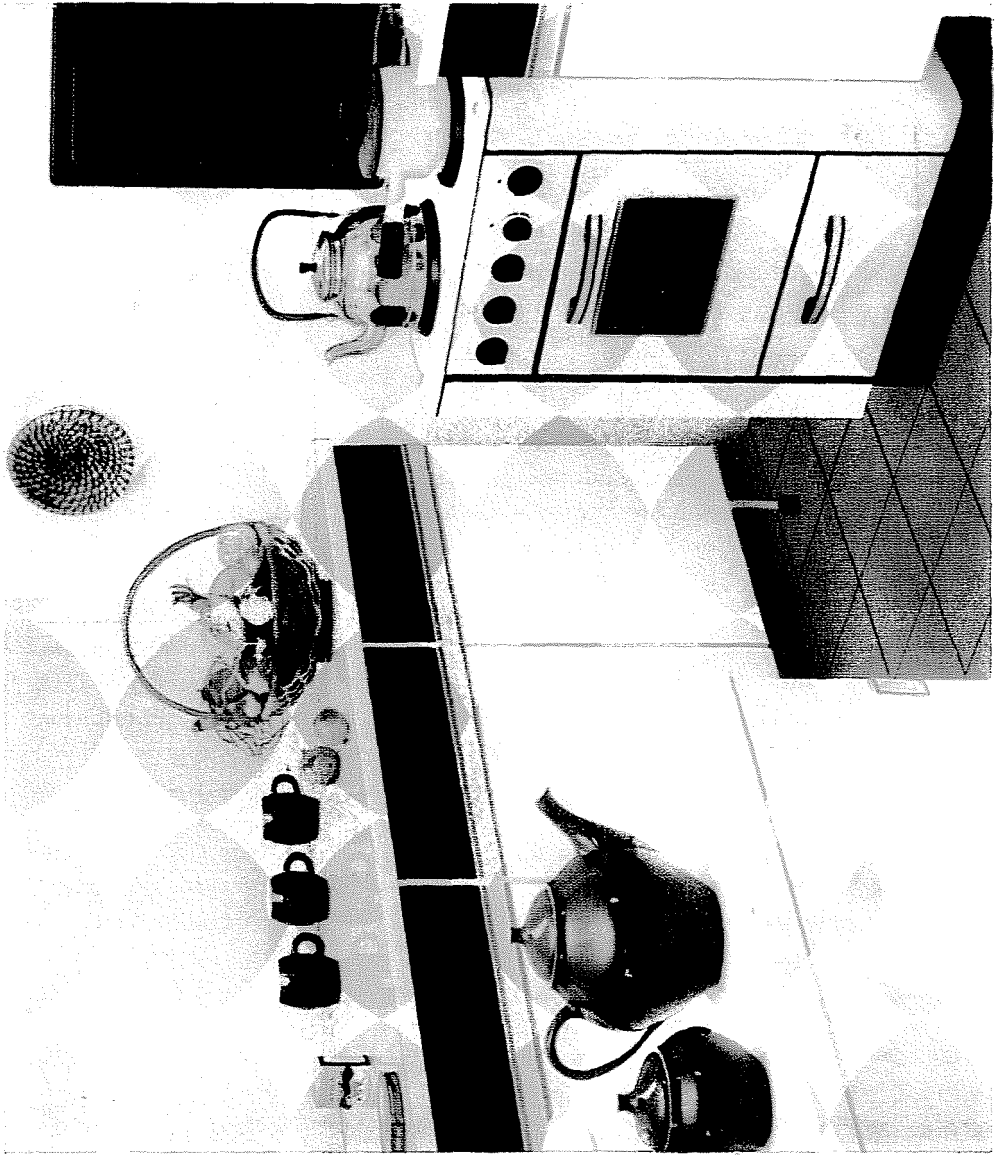
Natural flame — like that of candles or fire — gives a warm light, and that is why it has become popular again in the home, if not for illumination but to make it more cosy. Thousands of years of experience have taught man to think of fire as an awe-inspiring friend that keeps out the dark, offers protection and safety against beasts, and helps warm his food and drink, but plays havoc when let loose. The cementing force of fire is well expressed in the idea of the “family hearth”. Although with technical progress, fire has handed over much of its function to electric stoves, district heating, hot water supply, etc., it has preserved and even increased its emotional and atmosphere-creating power. It is nice to have an open fire in the home with its mystic lights, pleasant scent and warm radiation. The role of the light

— colour — of fire is evident from the difference between a fire-lit wall and one imitating the light of a fire by colour. In the first case, the eternal experience of the evolution of Man is revived while the other recalls the dullness of frozen sterile falsity. With its playful mobility, fire is a connecting link between the living occupant and the inanimate room, so relating light, colour and warmth.

The artificial lights of a room are general and local. Both depend on the function and effect of illumination though differ by grade and quality. The general illumination of a room has to provide for the quantity of light necessary to make every part of it clearly visible. But the mere quantity of general illumination raises problems of quality. A room that is insufficiently lit will always look more dreary than one bathed in light. While light means order and cleanliness, dusk always hides disorder and lack of hygiene. The quality of general illumination is in close connection with the colour effect of light. Colours in living rooms are developed to harmonize with the warm colour effect of natural daylight, therefore artificial illumination of considerably cooler light will act strangely and inhospitably. White illumination may be acceptable in principle in rooms which need not necessarily have windows, such as the bathroom, pantry, dressing room or toilet, where the only light is artificial. In this case, however, it should be kept in mind that a cold bluish-white light will turn everything blue and make everybody look paler than he is. In bathrooms, this may result in an excess of make-up. It may be concluded that a flat should have ample illumination — rather more than less — as near in warmth to the colour effect of natural light as possible.

Local illumination plays an important role in the homeliness of a flat. Though of minor significance as a mere completion of the general illumination of a room, its light effect grows in importance when it is the one source of light. In this case its effect is twofold: to illuminate a characteristic part of the room (e. g. the corner used for conversation, reading, needlework or cards) accentuating the gathering point in the dimly lit room, and also to keep the rest of the room in a mysterious semi-darkness with its dispersed and reflected lights. The latter function serves at the same time to reduce the dazzling effect of sudden sharp lights. While local lights should be considered for their direct illuminating effect (they should give good visibility, present people gathering there in a favourable light) their decisive impact on the colour effect of the room is to give atmosphere by radiating lively and gay colours and evocative coloured reflexes. This is why shades that scatter yellowish-white light downwards, dispersing at the same time a deeper colour — red, orange or yellowish-green — upwards and to the sides are used for local illumination.

Thus, while the general lights of a home should evoke the sober effect of natural illumination, the varieties of atmosphere-forming local lights are supposed to play with its colour effects.



Dark colours bring out the contours of the furniture in a light cream coloured kitchen

2. Colour schemes for residential units

The colour of buildings is always selected in harmony with the light and colour properties of the surrounding landscape. It is not by mere chance that in Mediterranean regions exceptionally rich in light and consequently in colours in the sky and on the land, most buildings are shining white. Even if in the decoration of a church or a palace coloured marble is applied, it is mostly of a pastel hue. In the often foggy regions of the Atlantic shores where the colours of nature become duller and are diluted with white and grey, the predominant colours of the buildings are rusty-red or violet-brown. In Northern regions of the Soviet Union covered by snow for the best part of the year the peasant homes are painted again in clear, vivid colours. The groups of gaily painted cottages break the monotony of the white-and-grey country like bunches of fresh flowers. It is not accidental either that "Vienna yellow" as a general colour for buildings was developed and spread in the baroque architecture of Central Europe. The walls of cottages in the Hungarian countryside are typically whitewashed. The varying illumination on the whitewashed walls lends itself to a rich play of light. In the moderate climate of Hungary the quantity and quality of sunshine is defined by the four seasons and a wide variety of climatic changes within them. In the colour of our buildings the whites of the Mediterranean co-exist with the rusty-red or violet-brown of the Atlantic and the Baltic. On the other hand, as Hungary has less of the whitish-grey, dull monotony of colours in the snow-covered country, gaily coloured groups of buildings are not natural but strange in this country.

2.1 Colours on houses

The colour effect of a building is different when seen from far away, as a big ensemble or from close to, when only the façade or just a part of it is visible. A well-selected, purposeful colour scheme always aims at accentuating and increasing the formal force of expression, the tectonics of a building. Therefore it may be accepted as a general principle that on white or light walls, window frames have more life if they are painted in dark or brilliant shades, while on dark — rusty or violet-brown — façades, white or light coloured window frames are more suitable. In baroque buildings pillars, cornices and sills — as expressive formal elements — were always emphasized by darker or lighter tones than those of the walls.

Today, too, the principles of colour schemes for homes are rooted partly in the social role, importance and function of the building and partly in its structural system and tectonics.

For residential units, the overall basic colour always depends on the

parts containing living quarters while communal rooms enrich it with their more lively colouring according to their function.

In principle, the overall basic colour may be one of three: the first is a neutral white or one of its warm blended hues; the second, different pastel shades; and the third a combination of both. The façades of blocks of flats built by modern technology (large-slab, no-fines concrete) are usually of concrete, and at present gravel or frost-resistant stone aggregate surfacings are the most economical, resulting in greyish, neutral surfaces. Care must be taken, however, to preserve the purity of white and to stop them looking dirty when newly built. Attempts have been made to develop colours on surfaces by admixing various paints. The crux of the problem is not the colour fastness of the paint (which, today, is merely a question of quality) but the unpleasant dull grey of the basic colour of the concrete, restricting the colours to darker and — what is worse — dirty hues. At the moment, fine and lasting façades are best made with coloured ceramics (mosaics). This, however, is a rather costly solution.

When applying plain claddings to dwelling houses it should be remembered that if major surfaces are dazzlingly reflective, they make an unpleasant impression, and it is better to use a matt cladding. Another point is that large unicoloured façades (even those of mosaic) are alien to houses, out of scale, and easily become inhuman in their effect.

It is also an aid to orientation to have houses painted in different colours. With a view to the cold, bluish effect of sky and atmosphere, it is advisable to keep the buildings in warm contrast colours.

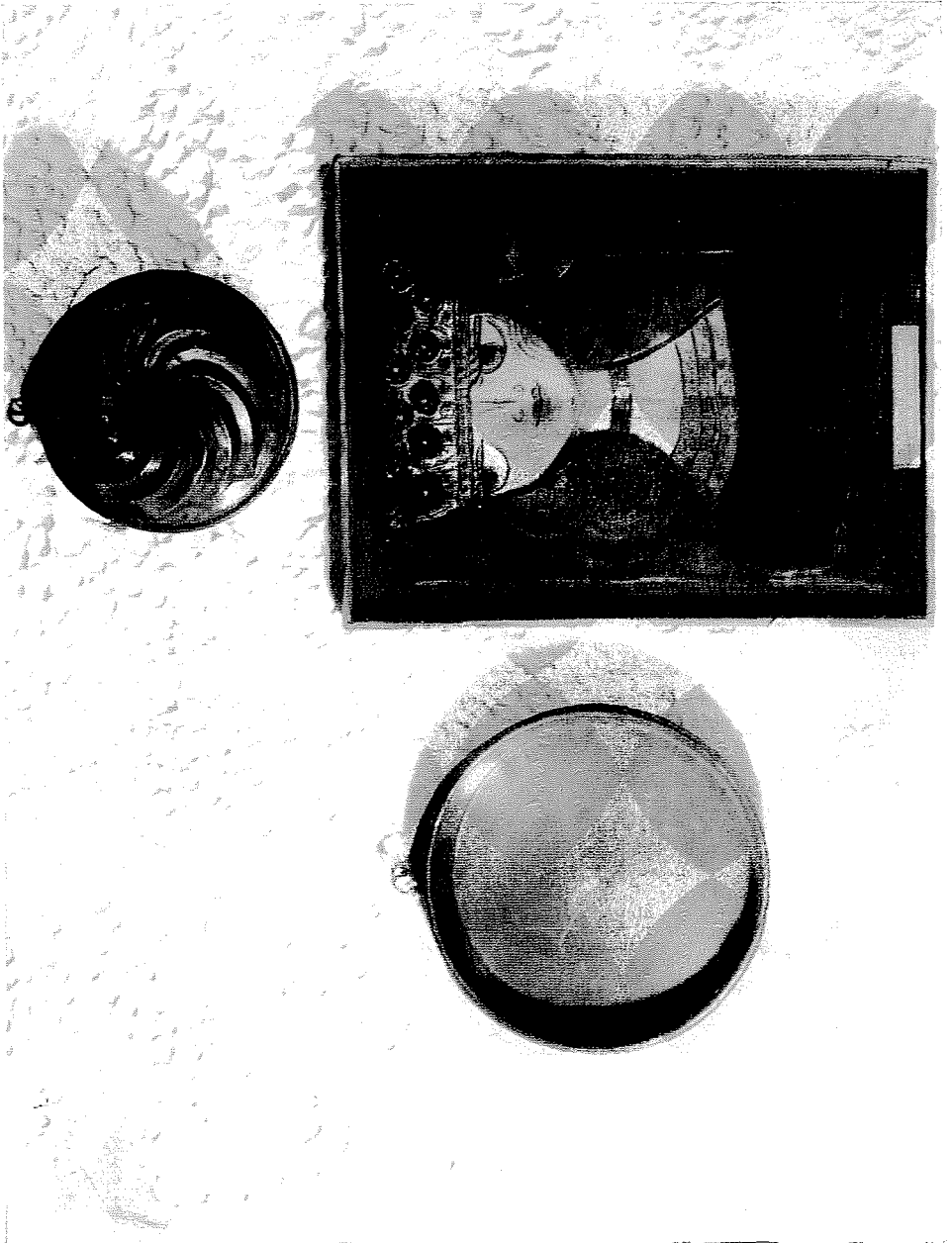
These aims and considerations have led to the third type of colour scheme for residential units, that combines the advantages of the two methods discussed. Applying neutral white or a warm blended hue as an overall basic colour, outlining certain tectonical plain surfaces and divisions in colour is the most widespread solution. The problem of a warm hue of blended white has been satisfactorily solved regarding concrete façade panels. By keeping some identical minor surfaces of the buildings — like parapets, loggia walls and ceilings — in a colour peculiar to the given building, colour differences can be developed dissolving formal uniformity to some extent, and facilitating orientation (orientation colours). When selecting the colour of walls and of ceilings of loggias, attention should be paid, however, to the reflection of various colours. While loggias of cold colours e. g. blue, turquoise and bluish-lilac will create a cold colour effect in the room behind, reflection of warm colours — yellow, orange, red, purple, yellowish-green — makes the room seem warmer and more homely. Orange reflection of the loggia will recall the cheering effect of moderate sunshine even on a cloudy day.

The effect of balcony or loggia parapets depends on whether they are made of non-translucent material or of stained glass. In the first case, if the

parapet is faced with coloured ceramic or enamel, it affects only the outer appearance of the building and therefore it may be in a cold or dark tone, too. A translucent glass parapet, on the other hand, has some light and colour effect on the room behind. In this case, attention should be paid to the effect of light falling into the room through stained glass — a problem discussed in some detail in Chapter 1.2. Although a stained glass parapet is generally a smaller surface than the loggia walls and ceiling, its colour effect on the room behind is very significant because of its position regarding the quantity of incident light (exposition to light being greatest in the outer wall plane) and because of the high reflective and dispersing ability of glass. It goes without saying that when using coloured glass parapets with the coloured walls of a loggia, the complex solution calls for colour studies from both aspects. It is advisable to examine the combined effect of the two colours both on the total effect of the façade — from outside — and on the room — from inside. What has been said in Chapter 1.3 about colour combinations on room walls holds true in this case. The problem is made more difficult by the fact that colour pairs have one effect when looked at from outside and another when seen from inside. Seen as an overall effect from outside the stained glass parapet acts as a colour filter, discolouring the walls and ceiling of the loggia behind it, which in turn modify the colour of the glass. Looking at it from inside, though both colours are of importance, that of the glass parapet is primary in the interaction, because of the intensive light dispersion. A blue glass parapet, for instance, will seem lighter from outside because of the effect of the white loggia walls, while from inside the cold effect of blue will be emphasized with a tint of timelessness. If the loggia behind blue glass is painted a warm yellow, the two colours will mix to form green. From inside, it preserves the warm homeliness of yellow, but (in strong sunshine) its vivacity is reduced by the soothing effect of green. The colour effect will be more exciting when orange and yellow are applied together but depressing and gloomy with blue and violet.

Besides loggias and balconies, other façade elements may be coloured, such as parapet walls — for precast façade panels, inserts made of coloured ceramics or plastics are suggested — or the grid of horizontal and vertical structural joints. As against parapet walls coloured by some surfacing, thus alien, the latter solution is correct as it underlines the tectonics of the building, and in particular, one of its delicate elements.

The colour effect of the common rooms in buildings is also important. The main point is to consider the functional aspects and aim at safety, cleanness and ease of movement and vision. It is generally good practice to keep the ceilings light, the walls darker and the floors still darker. Communication rooms should have doors conspicuous in colour, according to their function. Doors may be painted in a darker shade than that of the ceiling or the floor. If the walls are painted in gay or dark colours, the doors may be white or a pastel



The colour play of light on surfaces: on coarse plaster, plain and embossed copper, and painted wood

shade. The doors of recesses (meters, garbages, flues, etc.) should be moderate in colouring, preferably the same colour as the walls.

The leading principles in the colour scheme of service rooms are easy cleaning and simple maintenance.

2.2 *Colour schemes for community rooms*

The colour effect of residential units, (which gain their essential appearance from the apartment houses) is enriched by lively and functionally coloured community buildings.

People are both individuals and social beings. The absence or frustration of either part makes a person unbalanced and unhappy. The claim for privacy both for the individual within the family and for the family as a smaller unit within society, as well as for the possibility for a communal life at home and in his environment are rightful demands. Community life varies with age and spheres of interest. A modern flat will become a true home only through a wide range of communal services, including the care and education of children: trade and services; catering and entertainment.

Colour schemes for crèches, kindergartens and schools cannot be designed without any knowledge of the colour psychology of children, the changes in colour perception and colour preference in various periods of childhood.

Up to school age children have a special affinity to red while they are hardly attracted by green at all. Therefore, the dominant colour of the walls in crèches and babies' rooms should be pink. Red also has an important role in the colour scheme of kindergartens. It has already been stated that every colour has a contrast or complementary colour and children are even more aware of it than adults. This is why red wainscots or walls in crèches, kindergartens or primary schools have a soothing effect on children.

The painting of classrooms always depends on the occupants' age group. In the lower classes it is advisable to paint wainscots red, walls a warm tone and the ceiling light yellow or yellowish-green. Rooms for children in the years immediately before puberty are best painted yellow or light greenish yellow. Green has a cool effect on the eyes, and it is a very good colour for the wall opposite the children, the one they see most of the time. In this case, ochre or light orange would harmonize when applied to the side walls, as they give some transition from the red and orange combinations of earlier grades. The ceiling may be painted in a lighter hue of the wall colour or in light green.

In the period of adolescence, when children are mostly absorbed in their own thoughts and problems, it is better to give the ceiling some delimiting, concentrating, serious look, a light, easy red, for instance.

Teenagers of both sexes will enjoy being in a room where the ceiling seems important with its red shade, while the walls represent some hue of yellow or green. Blue, with its cold impression, is generally not suggested for a classroom. The ceiling may be painted blue, however, in the handcraft room,

where it has the beneficial effect of making work busy. In the room where girls do their needlework, a salmon pink ceiling is a good idea.

In the colour scheme for secondary school rooms, optics must be considered. It is a good idea to paint each classroom a different colour to develop and express the organizing, collecting and educating role of classes as communal units. Teachers will also find it more pleasant to start a new lesson in a different classroom.

Staircases and corridors should express free movement and spaciousness by their colours, especially by the use of blue and yellow in various hues. Care should be taken, however, to avoid sharp contrasts between the colour scheme of classrooms, corridors and resting places as this may put a strain on the students.

Gay and inspiring colours are pleasant for both student and teacher and they arouse a love for orderliness. This is why a purposeful selection of colours in places where young people gather is of special importance; a much neglected point to date.

A basic principle in the colour scheme of department stores and shops is the best display of goods and an atmosphere of pleasant excitement stimulating buying. The light should show up the colour of the goods while preserving their natural effect. Care should be taken that the background gets less light than the merchandize itself and does not create unfavourable colour reflexes. Thus, bluish light or its reflexes are generally out of place in a food store where they will reduce the appearance of bread and any white goods as much as that of meat. All the lights and light reflexes must enhance the impression made by the goods; in a coffee shop, for example, the brown coffee beans stand out well against a pale green background that does not itself emit reflexes and has a more yellow than blue effect. It is obvious that any kind of fresh meat will lose its appetizing attraction against a red background as the green protest colour makes the lively red of fresh meat look greenish grey and bad. Any meat product — sausages or ham — is more inviting when set on a greenish, greenish-blue background than on a white dish.

At the same time a slightly excited atmosphere encouraging people to buy is easier to attain with more varied and warmer colours than with uniplanar sobering "cold" blues.

In shops where the colour of goods is important to the customers, it is advisable to keep the walls leaf-green and the ceiling light yellow. It should not be forgotten, however, that prolonged looking at one colour almost "blinds" us temporarily and our eyes need some refreshing variety. This may be ensured by some other colour — blue or red — on lesser surfaces like banisters, runners, etc. The choice between coloured goods is easier when the top of the counter is of a neutral grey possibly bordered in white or black, while the sides and front may be a nice dark natural wood or neutral grey or black.

Red or reddish-brown with a grey, ivory or black pattern on the floor makes walking seem safer. Bluish-grey floors invite motion, moss-green makes the floor feel soft and elastic. The colour of the floor may have other functions, too: in a shoe shop, for instance, it is better to use some shade of green rather than red or brown, as it is a better background for leather, and besides, footwear is seldom green. Also the faculty of green to sooth and refresh the eye is important here as in selecting shoes both sellers and buyers see much of the floor.

The basic colours for various kinds of shops are thus determined by the endeavour to highlight the main items, following the rules of contrasting colours. In a hardware crockery and china shop yellow and blue are the best as they give a technical and unbiased impression. The walls should have a deep blue background alternating with ochre or pastel yellow surfaces, and the ceiling should be pale blue or white. It is for similar reasons that a blue and yellow basic colour scheme is suggested for other shops of a technical character, such as those selling spare parts or leather. At the butcher's the wall behind the counter at least should be bluish-green, while the rest of the shop may be a neutral white. In perfumeries the colour effect should associate the buyer with scent: turquoise and pink suggest the scent of delicate skin and neatness. At the barber's and particularly the hairdresser's, delicate colours suit the atmosphere.

Rather than analyse here all the types of trade and catering premises from the aspect of colour, the examples given are meant only to illustrate the attempt to present goods in their most attractive form and to create an atmosphere contributing to their functional use.

2.3 The colour harmony of residential units

Houses and blocks of flats form residential units. In the foregoing chapters the principles of the colour schemes for the particular elements of residential units have been discussed. In conclusion, a synthesis will be given of all mutual effects that should be observed in order to create an overall colour harmony of residential units.

In Chapter 2.1 it has been mentioned that in principle the higher a flat is situated, the richer the colour scheme it demands. For flats on lower storeys the natural environment with its rich colours — lawn, flowers, trees — has a more or less direct effect but this decreases the higher the storey. The natural environment is rapidly lost past the fourth or fifth floor, where wider views open before the eye and only the sky increases in effect. The environment is becoming increasingly discoloured, and the flats are in a coldly neutral surrounding hence need more vivid colours.

In Chapter 2.2 it was pointed out that communal rooms — according

to the variety of their functions — are richer and more flexible in their colour scheme. The fact that the proper place for them is on the ground floor or the mezzanine, implies that the richest and most varied colour effect of residential units belongs to this part. This of course means that adjoining flats should be more restrained in their colour scheme. This contrast also emphasizes the peace of the home and the atmosphere of relaxation against the busy turmoil of richly coloured communal rooms.

The two separate approaches to the colour schemes of flats leads to the same conclusion: flats on the lower levels should preferably have rather neutral colours, and be restrained in overall effect, but going higher they should be increasingly variegated. This, of course, does not rule out the chance for the occupants to express their colour taste, but it should be kept within the overall scheme.

It follows from the great variations in Hungary's climate, the colour effects that change with the seasons, and from technical and economic characteristics that the outside appearance of residential units should generally be dominated by colours primarily of light and warm tones (white, light yellow, pastels). Within this range, the colour effect of residential units may be enriched by the colours of certain tectonic elements which help orientation and give a more lively aspect to communal rooms and buildings, as well.

The form and colour of residential buildings are generally observed only at lower levels: ground floor and mezzanine. The majority of Budapest people, for example, have no difficulty in enumerating the shops along one of the main shopping streets in the capital, but even specialists may be unable to describe the architecture of buildings above the shops. This is because people in the street only observe objects at eye-level. They would have to look up to see the upper floors of a building and this would make their steps uncertain.

As mentioned in the introductory lines of Chapter 1.3, colour harmony in homes is never self-contained but man-centered and functional. Thus the colour harmony of a residential unit is solely for people who live there and move about in the constantly changing effect of colours. The colour scheme of the three basic elements — communal rooms, buildings, living houses — and their interactions are equally responsible for this effect. Colour harmony is thus one of several arguments in favour of a single architectural, creative conception to rule the creation of every residential unit as an artistic complex.

Summary

The findings of colour psychology are adapted to colour schemes for homes and residential units. A flat is a group of rooms that reflects individuality also by its colour scheme. The relationship between man and colour changes with age and status; individual colour preferences change, too. Light and colour effects in homes produce colour harmony. Colour combinations have a characteristic effect in rooms of definite functions. Colours of environ-

ment and home are interdependent. Colour effects are different in flats with artificial illumination.

The colour scheme for buildings is a function of light and colour features of the environment. The overall basic colour scheme for residential units should be the neutral colours of houses, enriched by coloured tectonic elements — also facilitating orientation (orientation colours) — superimposed by the richer and more vivid colour scheme for communal premises and buildings. Colour harmony is one of the arguments for considering a residential unit as a single architectural conception to preserve its artistic unity.

Prof. Dr. Antal REISCHL, Budapest XI., Műegyetem-rkp. 3. Hungary