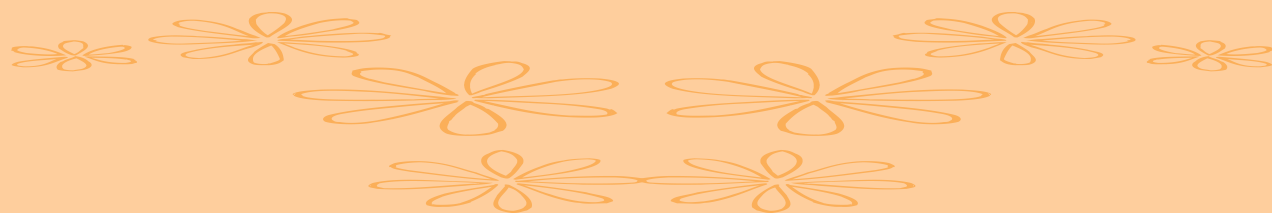


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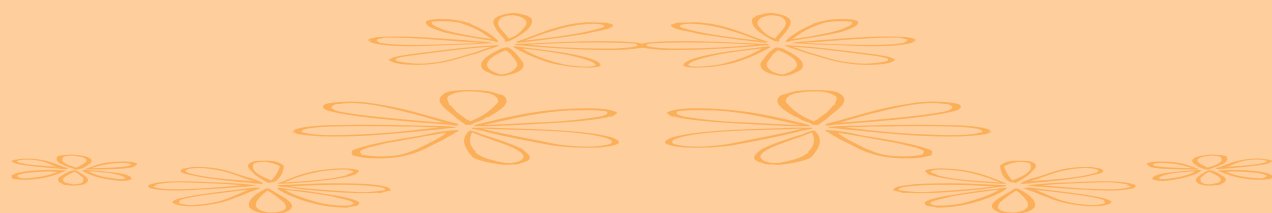


**11th ALL ORISSA CONFERENCE OF
Sri Aurobindo Engineering & Technical Group**



*All Nature dumbly calls to her alone
To heal with her feet the aching throb of life.*

- Sri Aurobindo



Om Namō Bhagabate Sri Aurobindayah

**11th All Orissa Conference of
Sri Aurobindo Engineering
and Technical Group**

(ALL ORISSA SRI AUROBINDO STUDY CIRCLE COMMITTEE)



12th October 2008

Venue

Venue:

**SRI AUROBINDO SHRIKSHETRA
DALIJODA, CUTTACK**

Tel: (0671) 2873405, 9437741408, 9437226026, 9937318802, 9937291283

e-mail: matrubhaban@bsnl.in;

www.matrubhaban.com



Sri Aurobindo Engineering and Technical Group

ALL ORISSA SRI AUROBINDO STUDY CIRCLE COMMITTEE

MATRUBHABAN, CUTTACK

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Prayer

Sweet Mother,
Pranams at Thy Lotus Feet.

The **Sri Aurobindo Engineering and Technical Group** is going to hold its **11th All Orissa Annual Conference** on **12th October 2008** at **Sri Aurobindo Shrikshetra, Dalijoda, Cuttack**. The theme for this year is '**Architecture**' and topic for the concluding session of the conference is "... **And beauty conquer the resisting world**".

Grant us sincerity, dedication and harmony in thought and action. Make us the Hero warriors. **We pray the Mother's Blessings, Protection and Presence in the conference.**

Victory to the Divine Mother.



Children of
Sri Aurobindo Engineering and Technical Group
Orissa



Telegram:
SRI AUROBINDO - PONDICHERRY

Pranab Kumar Bhattacharya

Director

Department of Physical Education
SRI AUROBINDO ASHRAM, PONDICHERRY
INDIA 605 002.

6th Oct' 2007

*Sri Aurobindo Ashram
Pondicherry - 605002
3-10-2008.*

*I am glad to hear that you are holding
the 11th anniversary of the Sri Aurobindo Engineering and Technical
Group on 12th October 2008, at Sri Aurobindo Shreekrishna,
Saligoda.*

*Throughout the ages, ^{and} in various epochs, Architecture
has changed in various form according to the change of
basic materials. I am sure, in future also, it will progress
in accordance with the circumstances ~~(circumstances)~~ prevalent
and ^{and} newer ideas, ^{and} newer technology will come forth forward.*

*Sending Mother's Ashirvadi, along with
my very best wishes.*

Yours affectionately

DADA
Pranab Kumar Bhattacharya
SRI AUROBINDO ASHRAM
PONDICHERRY - 605 002
INDIA.

Message from Dillip Da

Dear Brother,

To see the awakening of Orissa in the name of Sri Aurobindo and The Mother feels our heart with great hope. It is a delight to know that Sri Aurobindo Engineering and Technical Group would be meeting for the 11th All Orissa Conference at Dalijoda Cuttack on 12th Oct.2008. Also truly it is a pleasure to know about the formation Sri Aurobindo Bigyan Parishada for helping the Science Education in the Integral Schools.

My prayers are with you all in you progressive and pioneering activities in Their Name.

With my loving regards to the brothers and sisters, who would be gathering for the wonderful conference activities in cuttack.

Dillip Datta

PERMISSION FROM SRI AUROBINDO ASHRAM TRUST

We are glad to give you permission to use extracts from Sri Aurobindo's and the Mother's writings as well as reproduce Their photographs in the Souvenir that is being brought out for the annual 11th State level Conference of Sri Aurobindo Engineering & Technical Group, to be held on 12th October 2008, at Sri Aurobindo Shrikshetra, Cuttack. Kindly note that the photographs should figure inside the Souvenir and not on the cover and the quality of the prints should be ensured.

Proper reference notes should be given and due acknowledgement made to Sri Aurobindo Ashram Trust for the above permission. A copy of the Souvenir may kindly be sent to us for our records.

With kind regards,

Manoj Das Gupta

The Suprarational Beauty

Sri Aurobindo

..... In its earliest stages the appreciation of beauty is instinctive, natural, inborn, a response of the aesthetic sensitiveness of the soul which does not attempt to give any account of itself to the thinking intelligence. When the rational intelligence applies itself to this task, it is not satisfied with recording faithfully the nature of the response and the thing it has felt, but it attempts to analyse, to lay down what is necessary in order to create a just aesthetic gratification, it prepares a grammar of technique, an artistic law and canon of construction, a sort of mechanical rule of process for the creation of beauty, a fixed code or Shastra. This brings in the long reign of academic criticism superficial, technical, artificial, governed by the false idea that technique, of which alone critical reason can give an entirely adequate account, is the most important part of creation and that to every art there can correspond an exhaustive science which will tell us how the thing is done and give us the whole secret and process of its doing. A time comes when the creator of beauty revolts and declares the charter of his own freedom, generally in the shape of a new law or principle of creation, and this freedom once vindicated begins to widen itself and to carry with it the critical reason out of all its familiar bounds. A more developed appreciation emerges which begins to seek for new principles of criticism, to search for the soul of the work itself and explain the form in relation to the soul or to study the creator himself or the spirit, nature and ideas of the age he lived in and so to arrive at a right understanding of his work.

The intellect has begun to see that its highest business is not to lay down laws for the creator of beauty, but to help us to understand himself and his work, not only its form and elements but the mind from which it sprang and the impressions its effects create in the mind that receives. Here criticism is on its right road, but on a road to a consummation in which the rational understanding is overpassed and a higher faculty opens, suprarational in its origin and nature.

For the conscious appreciation of beauty reaches its height of enlightenment and enjoyment not by analysis of the beauty enjoyed or even by a right and intelligent understanding of it,—these things are only a preliminary clarifying of our first unenlightened sense of the beautiful,—but by an exaltation of the soul in which it opens itself entirely to the light and power and joy of the creation. The soul of beauty in us identifies itself with the soul of beauty in the thing created and feels in appreciation the same divine intoxication and uplifting which the artist felt in creation. Criticism reaches its highest point when it becomes the record, account, right description of this response; it must become itself inspired, intuitive, revealing. In other words, the action of the intuitive mind must complete the action of the rational intelligence and it may even wholly replace it and do more powerfully the peculiar and proper work of the intellect itself; it may explain more intimately to us the secret of the form, the strands of the process, the inner cause, essence, mechanism of the defects and limitations of the work as well as of its

qualities. For the intuitive intelligence when it has been sufficiently trained and developed, can take up always the work of the intellect and do it with a power and light and insight greater and surer than the power and light of the intellectual judgment in its widest scope. There is an intuitive discrimination which is more keen and precise in its sight than the reasoning intelligence.

What has been said of great creative art, that being the form in which normally our highest and intensest aesthetic satisfaction is achieved, applies to all beauty, beauty in Nature, beauty in life as well as beauty in art. We find that in the end the place of reason and the limits of its achievement are precisely of the same kind in regard to beauty as in regard to religion. It helps to enlighten and purify the aesthetic instincts and impulses, but it cannot give them their highest satisfaction or guide them to a complete insight. It shapes and fulfils to a certain extent the aesthetic intelligence, but it cannot justly pretend to give the definitive law for the creation of beauty or for the appreciation and enjoyment of beauty. It can only lead the aesthetic instinct, impulse, intelligence towards a greatest possible conscious satisfaction, but not to it; it has in the end to hand them over to a higher faculty which is in direct touch with the suprarational and in its nature and workings exceeds the intellect.

And for the same reason, because that which we are seeking through beauty is in the end that which we are seeking through religion, the Absolute, the Divine. The search for beauty is only in its beginning a satisfaction in the beauty of form, the beauty which appeals to the physical senses and the vital impressions, impulses, desires. It is only in the middle a satisfaction in the beauty of the ideas seized, the emotions aroused, the perception of perfect

process and harmonious combination. Behind them the soul of beauty in us desires the contact, the revelation, the uplifting delight of an absolute beauty in all things which it feels to be present, but which neither the senses and instincts by themselves can give, though they may be its channels,—for it is suprasensuous,—nor the reason and intelligence, though they too are a channel,—for it is suprarational, supra-intellectual,—but to which through all these veils the soul itself seeks to arrive. When it can get the touch of this universal, absolute beauty, this soul of beauty, this sense of its revelation in any slightest or greatest thing, the beauty of a flower, a form, the beauty and power of a character, an action, an event, a human life, an idea, a stroke of the brush or the chisel or a scintillation of the mind, the colours of a sunset or the grandeur of the tempest, it is then that the sense of beauty in us is really, powerfully, entirely satisfied. It is in truth seeking, as in religion, for the Divine, the All-Beautiful in man, in nature, in life, in thought, in art; for God is Beauty and Delight hidden in the variation of his masks and forms. When, fulfilled in our growing sense and knowledge of beauty and delight in beauty and our power for beauty, we are able to identify ourselves in soul with this Absolute and Divine in all the forms and activities of the world and shape an image of our inner and our outer life in the highest image we can perceive and embody of the All-Beautiful, then the aesthetic being in us who was born for this end, has fulfilled himself and risen to his divine consummation. To find highest beauty is to find God; to reveal, to embody, to create, as we say, highest beauty is to bring out of our souls the living image and power of God.

(Human Cycle /The Suprarational Beauty)



What is needed is just a handful of earth

The Mother

The night before last, I spent more than three hours with Sri Aurobindo and I was showing him all that was about to come down for Auroville. It was quite interesting. There were games, there was art, there was even cooking! But all that was very symbolic. And I was explaining to him as though on a table, in front of a vast landscape. I was explaining to him the principle on which physical exercises and games were going to be organised.

It was very clear, very precise, I was giving as though a demonstration, and it was as though I was showing on a very small scale a miniature representation of what was going to be done. I was moving people and things (*gesture, as though on a chess-board*).

But it was very interesting, and he was very much interested: he was laying down the broad laws of organisation (I do not know how to explain). There was art and it was beautiful, it was good.

And how to make the houses pleasant and pretty, upon what principle of construction. And then even the kitchen; it was so amusing, each one brought

forward his invention.... This went on for three hours—three hours of the night, it is a lot! Very interesting.

Yet conditions upon earth seem to be very far from all that...

(*After some hesitation*) No... it was right there, it did not seem to be “foreign” to earth. It was a harmony: a conscious harmony behind things; a conscious harmony behind the physical exercises and the games; a conscious harmony behind the decoration, the art; a conscious harmony behind the food...

I mean that all this seems to be at the opposite pole of what is now upon earth.

Not...

No?

I saw X today and I was telling him that the whole organisation of the arts and sports, even of food and all the rest, was ready in the subtle physical—ready to come down and embody itself—and I told him, “What is needed is just a handful of earth (*gesture of cupping the hands*), a handful of earth where one could grow the plant.... One must find a handful of earth to let it grow.”



Planes of aesthetic seeking and activity

Er Radha Baran Mohanty

“RELIGION is the seeking after the spiritual, the suprarational and therefore in this sphere the intellectual reason may well be an insufficient help and find itself, not only at the end but from the beginning, out of its province and condemned to tread either diffidently or else with a stumbling presumptuousness in the realm of a power and a light higher than its own.” - Sri Aurobindo (The Human Cycle, Chapter XIV, p. 136)

Sri Aurobindo has pointed out the insufficiency of the intellectual knowledge in the field of spiritual knowledge, additionally also brings forth its role in the other spheres of human consciousness and human activity such as creative arts, poetry, painting, sculpture, architecture.

“Its province may be larger, its powers more ample, its action more justly self-confident, but in the end everywhere it finds itself standing between the two other powers of our being and fulfilling in greater or less degree the same function of an intermediary.” (The Human Cycle, Chapter XIV, p. 136)

“But in its origin this seeking for beauty is not rational; it springs from the roots of our life, it is an instinct and an impulse, an instinct of aesthetic satisfaction and an impulse of aesthetic creation and enjoyment. Starting from the infrarational parts of our being, this instinct and impulse begin with much imperfection and impurity and with great

crudities both in creation and in appreciation. It is here that the reason comes in to distinguish, to enlighten, to correct, to point out the deficiencies and the crudities, to lay down laws of aesthetics and to purify our appreciation and our creation by improved taste and right knowledge.

While we are thus striving to learn and correct ourselves, it may seem to be the true law-giver both for the artist and the admirer and, though not the creator of our aesthetic instinct and impulse, yet the creator in us of an aesthetic conscience and its vigilant judge and guide. That which was an obscure and erratic activity, it makes self-conscious and rationally discriminative in its work and enjoyment.” (The Human Cycle, pp. 136 – 137)

Mother has elaborated further on the above paragraph in one of her evening talks.

Q- Sweet Mother, what is an aesthetic conscience?

A- “It is the consciousness of beauty. Aesthetic means that which concerns beauty, art. There are people, for example, who move around in life and see landscapes, see people and things and have absolutely no sense of whether it is beautiful or not; and into the bargain, it makes no difference at all to them. They look at the sky, see whether there are any clouds, whether it will rain or be clear, for instance; or whether the sun is hot or the wind cold. But there are others—when they raise their eyes and look

at a beautiful sky, it gives them pleasure, they say, "Oh! It is fine today, the sunrise is lovely today, the sunset is beautiful, the clouds have fine shapes." So, the first kinds do not have an aesthetic conscience, the second have." (CWM, Questions and Answers 1955, p.179)

Q - Sweet Mother, Sri Aurobindo has said here: "...this seeking for beauty ... springs from the roots of our life..." What are the roots of our life?

The Mother- "He means that it is instinctive, that it isn't rational, it doesn't depend on the domain of reason, it is something instinctive. We have a sense of beauty and love beauty without even knowing why, and there are things which give the sense of beauty without our knowing why, without our reasoning. It is instinctive. He says that this is the infrarational stage of the aesthetic sense. It is absolutely obvious that a child, who sees a pretty flower and has the feeling of beauty he does not know why, would never be able to tell you that it's because the form is balanced and the colours are lovely; he cannot explain it. Therefore it is not rational, it is altogether instinctive, it is an attraction, an impulse drawing one towards something, a harmony one feels, without being able to define it.

For example, you enter a historical building, and suddenly you are seized by the sense of a great beauty; how do you explain it? If someone asks you about it you would say, "Well, I feel that it is beautiful." But if an architect enters a building and has the same feeling that it is beautiful, he will immediately tell you, "It's because the lines meet harmoniously, the mass of the volumes is in harmony, the entire structure follows certain laws of beauty, order and rhythm", and he will

explain them to you. But that's because he is an architect, and yet you could have felt the beauty as much as he without being able to explain it. Well, your feeling for beauty is what Sri Aurobindo calls infrarational, and his feeling for beauty is what Sri Aurobindo calls rational, because he can explain with his reason why he finds it beautiful.

But what precisely he tells us in this paragraph is that when it is an instinct it is found mixed with movements of ignorance and a lack of culture and refinement. So this instinct is sometimes very gross and very imperfect in its expression. One can experience an aesthetic pleasure (let us call it that) in seeing something which is truly beautiful and at the same time something else which is not beautiful, but which gives one some sort of pleasure, because it is mixed, because one's aesthetic instinct is not pure, it is mixed with all kinds of sensations which are very crude and untrained. So it is here, as he says, that reason has its role, that it comes in to explain why a thing is beautiful, to educate the taste; but it is not final, and reason is not the final judge; it can very well make mistakes, only it is a little higher, as judgment, than that of a completely infrarational being who has no reason and no understanding of things. It is a stage. It is a stage, that's what he says, it is a stage. But if you want to realise true beauty, you must go beyond that, very far beyond this stage. In what follows in our reading he will explain it." (CWM, Questions and Answers 1955, pp.179 - 183)

In the following paragraphs, Sri Aurobindo explains the barriers posed by the intellectual knowledge in our journey towards perfection and the need to go beyond intellect

to accomplish the greatest and most powerful creation of beauty.

“But again this is true only in restricted bounds or, if anywhere entirely true, then only on a middle plane of our aesthetic seeking and activity. Where the greatest and most powerful creation of beauty is accomplished and its appreciation and enjoyment rise to the highest pitch, the rational is always surpassed and left behind. The creation of beauty in poetry and art does not fall within the sovereignty or even within the sphere of the reason. The intellect is not the poet, the artist, the creator within us; creation comes by a suprarational influx of light and power which must work always, if it is to do its best, by vision and inspiration.”

“It may use the intellect for certain of its operations, but in proportion as it subjects itself to the intellect, it loses in power and force of vision and diminishes the splendour and truth of the beauty it creates. The intellect

may take hold of the influx, moderate and repress the divine enthusiasm of creation and force it to obey the prudence of its dictates, but in doing so it brings down the work to its own inferior level, and the lowering is in proportion to the intellectual interference.”

“Art-creation which accepts the canons of the reason and works within the limits laid down by it, may be great, beautiful and powerful; for genius can preserve its power even when it labours in shackles and refuses to put forth all its resources: but when it proceeds by means of the intellect, it constructs, but does not create. It may construct well and with a good and faultless workmanship, but its success is formal and not of the spirit, a success of technique and not the embodiment of the imperishable truth of beauty seized in its inner reality, its divine delight, its appeal to a supreme source of ecstasy, Ananda.” - Sri Aurobindo (The Human Cycle, Chapter XIV, p. 137)



... Science is chiefly useful to the God-lover & the God-knower because it enables him to understand in detail and admire the curious wonders of His material workmanship... how the spirit has manifested itself in matter...

(AIM- July,2006)

- Sri Aurobindo

Architecture For Common Man.....

Ar. Bhawani S. Mishra

Architecture: The art of creating spaces and skills to beautify one's lifestyle. It is something which has art woven into every line, every curve, every wall & every corner..

Architecture can very strongly influence one's thought. It can amaze us, calm us, make us happy or even make us laugh, because it is something real which can be seen and appreciated by anyone & everyone. It is unlike other forms of art which has to be displayed to be seen & not many to get to see it. But architecture can be found at every street and nook not requiring any gallery to be exhibited.

Every man has, a dream to have something like his dreams. But to realise this dream is something everyone cannot do.

Beauty can be appreciated by everyone but not everyone can create it. One may often think that an architect is a person merely responsible for construction of a building and with this idea, any common man would go about designing their spaces according to their fantasies, taking every decision by themselves, not realising that there are several other factors(not known to them) that need to be taken care of.

This finally leads to major designing blunders with waste of time and money which the occupant regrets later and lives in a jeopardised way.

So one needs to realise that architects not only give shape to their dreams but also entwine it with creativity, fulfilling all other needs such as functionality of spaces, climatic and structural aspects, connectivity and circulation, proper construction methods and materials to be used. When consulting an architect one should present a clear cut idea about the requirements and needs. They should also give a picture of spending capacity so that the design formulation falls under the budget .the architect also needs to be told about the constraints or advantages of the site. And most importantly the client needs to have trust in the ideas of the architect so that they together turn a fantasy into reality.

People may think science and art move in opposite direction but an architect is someone who can bring them both together and also weave it beautifully and that is what they do every time they design new structures ...



Architecture : The Mother of all arts

Sujay Sengupta

Lecturer (Sr.Scale)

Chandigarh College of Architecture

From the day man understood the benefit of socializing and living in groups under a roof, he has been engaged in designing his shelter. In this process of experimentation and evolution of built-form – be it for living or for working, some men have mastered the art of conceptualizing and giving a final shape to the dream structures of individuals. These professional master designers have been known as **ARCHITECTS**.

Architecture is the science of designing aesthetically pleasing and functional buildings and their surrounding environment.

Even prior to the dawn of civilization, man started erecting his shelter with the help of branches of trees, skin of animals, dried grass, leaves, etc. As he started civilizing and utilized his super brain for understanding and analyzing facts, he started making comfortable structures of stone, marble, timber, etc. Gradually, with advancement in science and technology, architects have learnt about various techniques of construction and have acquired the knowledge of thousands of materials which can be used in buildings for structural as well as aesthetic purposes.

Architecture is basically the physical manifestation of ones imagination about some built up space with practical application of the latest available technology. A trained architect can give form to all physical needs and human comfort and simultaneously can create several

wonders of the world. Could we imagine of Pyramids or Hanging Gardens or Taj Mahal or even Twin towers if the Architects were not patronized by the society or the religions?

Architecture has often being pampered by various phrases like ‘Mother of all arts’... ‘Frozen Music’... ‘Beauty with a Brain’... etc. Several master Architects have coined different theories while practicing architecture e.g. Greeks were fond of ‘Optical Corrections’, Romans favored monumentality, Renaissance architects preferred sculptural expressions, etc.... Modern architects preferred theories like ‘Golden Section’, ‘Form follows Function’, ‘Less is More’, ‘Organic Architecture’, ‘Green Buildings’, ‘Sustainable and Energy-efficient Buildings’, ‘Low cost structures’, etc.

But whatever may be the underlying theory, the primary objective of each and every architect has always been to provide comfort and good feeling to the users of all buildings and spaces he designs. It can be extravagant and monumental, be a skyscraper or be a tiny cottage; can be a hub of education and research or a precinct for religious activities; can be a centre of recreation or a nucleus of economic activities; can be a correctional home or a health care facility.....

In fact, the entire built environment on this earth is the showcase of Architecture and an on-going exhibition of the Architects’ creation.



Interior Design – A need for everyone

Ar. Geet Inder Batth
Asst. Prof., PMCA

Interior design is the branch of Architecture which deals with the planning and payout of the interior spaces within a building. A building satisfies our basic need of shelter and protection, but the interior spaces within the building influence the shape of our activities. It is very much essential to have organized interior spaces which help in smooth functioning of our internal activities.

Simply four walls do not reflect the personality of a person. What changes can we bring into a space to make it personalized is the main objective of interior design. Therefore the purpose of interior design is to give personal touch and identity to the faceless walls, flats, rooms or offices etc. The more important is that the space should be functionally fit, aesthetically pleasing and psychologically enhancing.

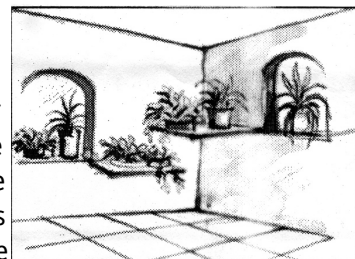
An interior space is governed by the activity which is performed in that particular space. To carry out that activity we need some furniture and storage units. Adequate furniture makes our activity comfortable and proper storage spaces for each and every item required in that space makes it clutter free and does not lead to chaos or confusion. Ultimately it helps in saving our time while performing a certain task. This is the functional requirement of a space to have adequate storage and furniture.

The second important requirement is to make the interior look good - is aesthetical

requirement. Walls can be painted in the colour of our choice. Colour of the room should be decided according to the size of the room and the activity which will be performed in that space. Light colours for small spaces and dark colours for bigger spaces should be chosen. How much light level is required in a room depends on the activity to be performed. Light colours reflect most of the light and increase the light level and make it look brighter. Darker colours absorb much of the light and reduce the light level in a room. The activity (like reading and sewing etc.) requires more light level and should be painted in light colours.

Other furnishings can also be matched with the same colour, so that there is harmony between the objects present in that room. To further beautify the walls some pictures can be hung. We can also display some pieces of art in that space.

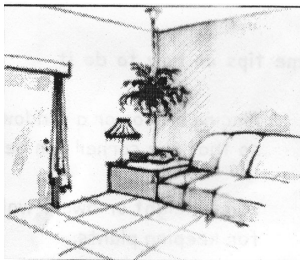
It is extremely important to place plants in interior as they bring natural touch in the space. Plants improve the quality of air inside the building and reduce the concentration of indoor air pollution. Use of Plants in the interior adds colour and life to the space.



The evergreen shade loving plants are best for interior use, which require minimum care from the owner.

Increase in population has resulted in the decrease of our dwelling sizes. People have to stay in flats and apartments where space is limited against unlimited needs. One of the major aims of interior design is to make a room look spacious. The size of the furniture should be according to the size of the room. Small areas should have space saving furniture so that there is adequate circulation space in the room to move around.

Furniture placed in a room should be multifunctional and space saving. Sofa cum bed can be used as an extra bed when required. Use of bunk bed or toddler bed in a small room saves space and provides some



extra activity area. Storage spaces to be integrated within the furniture for effective use of space.

It is generally assumed that interior design involves lot of money but this assumption is baseless. A space can be made to look good with low budget also. Instead of expensive furniture the room can be furnished with locally available cost effective furniture, which can be much more comfortable than the expensive one.

Our hot and humid climate does not require carpets and rugs to cover the floor. The windows should not be covered with thick drapery. The maximum light should be allowed inside. The more important is that the room should be well lit and well ventilated which helps in reducing humidity level and makes the interior comfortable. The performance level of a person reduces in dark and dingy space.

There is a difference between interior design and interior decoration. Decoration is merely a cosmetic treatment and does not improve the functional aspect of a space.

Comfortable interiors help in enhancing our psychological level and improve efficiency. Thus an interior has to be functionally fit, aesthetically pleasing and psychologically enhancing.



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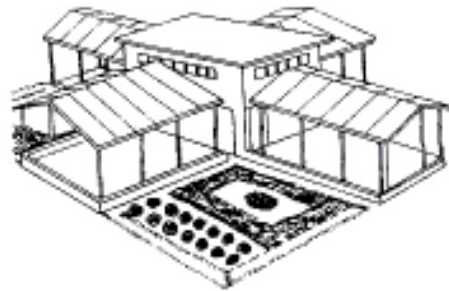
Planning And Design Considerations For Schools

Ar. Maitreyee Mishra

School is like a second home for children. A child spends around three to four hours at primary level and around six to seven hours at secondary level during his school life. The prime objective of education is to create situations in schools where children could be guided to search for knowledge and develop their creative faculties. School environment is a very important part of the process of education, because its design influences children and their learning capacity. Apart from getting knowledge from texts and data in academic curriculum a child gains a lot of experience from its physical environment. The class room environment has a direct bearing on the development of personality of children. Its size, shape, flexibility, level of light, ventilation and storage facilities do reflect in implementation of curriculum and teacher's capability. It has been experienced that inspite of the teaching capability, the teachers due to lack of physical environment and functional facilities in the classrooms find themselves handicapped in achieving their objectives. Hence it is desirable that both outdoor and indoor spaces should be so designed to make it lovable and adoptable.

School Sites :

The school site is first and foremost an educational tool. Its size determination depends upon the proper understanding



Indoor and outdoor work areas

of its functional qualities and space requirements for different activities. The prime object in the provision of proper and adequate school site is the educational and physical need of children.

Considerations for site selection

- Site should be gently sloping and well drained.
- Site should be preferably on the same side of village or settlement. Crossing traffic road, railway line should be avoided.
- Site should not have overhead high tension wire.
- Site should be open to breeze and sun.
- Site should have the possibility for future expansion.
- Site should not be under ownership dispute.
- Site should not be on flood affected land.

Recommended sizes of the sites

School (rural area)	Intake	Area in acre
Primary school	60	0.25 to 0.30
-Do -	100	0.5 to 0.7
-Do -	upto 200	1.25 to 1.5

For urban area these size vary from 0.5 acre to 2.25 acre depending on the intake of the school.

Teaching Spaces:

Basic concept of education depended on some form of activities related to life. It planned more of activity and craft work for creating greater interest in the acquisition of knowledge and development of proper attitude towards the dignity of labour, appreciation of other's work and promotion of cooperation amongst the children. For a well equipped activity type of school a greater flexibility in space is considered essential in addition to provision of storage space, multipurpose room etc.

Although various types of spaces are required to cater for various activities the success of the school depends primarily upon the classroom provided in the scheme. A classroom should not be a mere enclosure of space to cater for the large variety of activities. It must provide a flexible space to meet the changing challenges.

It has been observed that a desk 97cm x 46cm is enough to accommodate two primary school students. A space of 46cm width between two rows of desks is considered just adequate for two children to cross each other. A distance of 2.13m. between the first row and chalk board has been adopted. Distance from the last row

to the chalk board should not be more than 7m., as beyond this children find it difficult to listen to the teacher. A class room size should be 6.1m x 7.3m for a strength of 40 students. Shape of class room need not be square or rectangular only. One can go for different alternative shapes keeping in mind the basics that are discussed above and area per pupil can be taken from 1.02 sqm to 1.12sqm. Science laboratories can be of rectangular shapes (as this is more useful) of size 6.9m x 9.8m for a group of 24 students.

Other spaces:

Multipurpose hall is a space where number of activities such as morning assembly for prayer, meetings of the school, annual function are performed. Innovative planning and use of this space with the help of light movable acoustic partition the efficiency could be substantially increased thereby saving on classroom spaces. Its use could further be increased if the built-up space could be combined with the organized open areas, outdoor play field.

For sanitation and water supply, the following recommendations can be accepted.

Latrine @one for 40 boys and @one for 25 girls should be provided. Urinals should be one for 20 boys and one for 20 girls. For 100 boys and 100 girls two wash basins can be given. Drinking water tap should be provided in the ratio 1:50. Water tank should be kept near latrine block.

Considerations for design:

For furniture, geometry should be simple and attractive. Furniture unit easy to fabricate and assemble by hand tools with

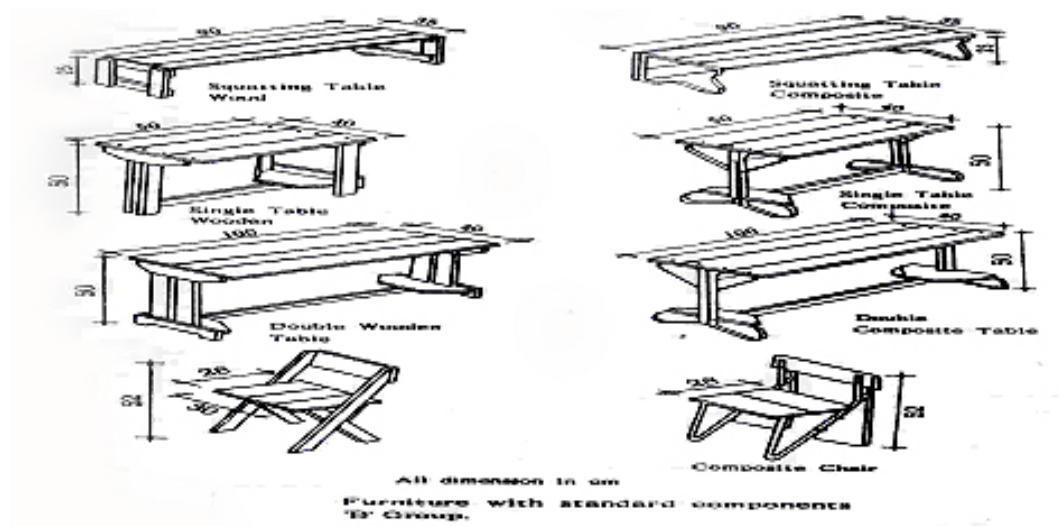
minimum breakage during transportation should be designed. Figures of some such furniture are given.

A completed building has to satisfy a variety of functions and thus the prime objective is to design a building which will give appropriate environment to its users. Building should be designed keeping this in mind and understanding the climate properly. For example, if the climate is hot and dry, a compact and inward looking plan is preferred where as for warm and humid climate one should go for open, staggered and courtyard planning.

Light without glare is preferred for teaching. Hence more openings should be given in North direction.

Provision of natural ventilation is another important aspect to be taken care of, so that more of natural wind enters indoor.

Utilisation of locally available material and technology should be given due importance with a combination of innovative and new technology.



Conclusion:

Design of a school building requires a lot of analysis of various aspects. Education is the basics of any nation and proper education to the children will take it to a higher level. Developing countries like India are still searching for techniques and

materials so that school education can reach out to each individual. The role of architecture in the entire mission shall be to create such an environment through planning and design so that it is adoptable to the users and also to the community as a whole.



Solar Architecture

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Solar architecture :

The term solar architecture refers to an approach to building design that is sensitive to Nature and takes advantage of climatic conditions to achieve human comfort rather than depending on artificial energy that is both costly and environmentally damaging. Unlike the conventional design approach that treats climate as the enemy which has to be kept out of the built environment, solar architecture endeavours to build as part of the environment using climatic factors to our advantage and utilising the energy of Nature itself to attain required comfort levels. Nature's energies can be utilised in two ways – passive and active and consequently solar architecture is classified as passive solar and active solar architecture.

PASSIVE SOLAR ARCHITECTURE

It relies upon the design or architecture of the building itself to ensure climate control by way of natural thermal conduction, convection and radiation. The rudiments of solar passive design were developed and used through the centuries by many civilisations across the globe; in fact, many of these early civilisations built dwellings that were better suited to their climatic surroundings than those built today in most developed and developing countries. This has been largely due to the advent of cheap fossil fuels that allowed

for artificial temperature and light control at the cost of natural light and cooling. A substantial share of world energy resources is therefore being spent in heating, cooling and lighting of such buildings. The use of solar passive measures such as natural cross ventilation, sufficient day-lighting, proper insulation, use of adequate shading devices coupled with auxiliary energy systems that are renewable and environment friendly can considerably bring down the costs as well as the energy needs of the building.

Passive solar systems :

The term passive solar refers to systems that absorb, store and distribute the sun's energy without relying on mechanical devices like pumps and fans, which require additional energy. Passive solar design reduces the energy requirements of the building by meeting either part or all of its daily cooling, heating and lighting needs through the use of [solar energy](#).

Passive heating :

Heating the building through the use of solar energy involves the absorption and storage of incoming solar radiation, which is then used to meet the heating requirements of the space. Incoming solar radiation is typically stored in thermal mass such as concrete, brick, rock, water or a material that changes phase according to temperature. Incoming sunlight is regulated

by the use of overhangs, awnings and shades while insulating materials can help to reduce heat loss during the night or in the cold season. Vents and dampers are typically used to distribute warm or cool air from the system to the areas where it is needed. The three most common solar passive systems are **direct gain**, **indirect gain** and **isolated gain**.

A **direct gain system** allows sunlight to windows into an occupied space where it is absorbed by the floor and walls. In the **indirect gain system**, a medium of heat storage such as wall, in one part of the building absorbs and stores heat, which is then transferred to the rest of the building by conduction, convection or radiation. In an **isolated gain system**, solar energy is absorbed in a separate area such as greenhouse or solarium, and distributed to the living space by ducts. The incorporation of insulation in passive systems can be effective in conserving additional energy.

Passive cooling :

Passive solar technology can also be used for cooling purposes. These systems function by either shielding buildings from direct heat gain or by transferring excess heat outside. Carefully designed elements such as overhangs, awnings and eaves shade from high angle summer sun while allowing winter sun to enter the building. Excess heat transfer can be achieved through ventilation or conduction, where heat is lost to the floor and walls. A radiant heat barrier, such as aluminium foil, installed under a roof is able to block up to 95% of radiant heat transfer through the roof.

Water evaporation is also an effective method of cooling buildings, since water absorbs a large quantity of heat as it evaporates. Fountains, sprays and ponds provide substantial cooling to the surrounding areas. The use of sprinkler systems to continually wet the roof during the hot season can reduce the cooling requirements by 25%. Trees can induce cooling by transpiration, reducing the surrounding temperature by 4 to 14 degrees F.

Active cooling systems of solar cooling such as **evaporative cooling** through roof spray and roof pond and desiccant cooling systems have been developed along with experimental strategies like **earth-cooling tubes** and **earth-sheltered buildings**. Desiccant cooling systems are designed to dehumidify and cool air. These are particularly suited to hot humid climates where air-conditioning accounts for a major portion of the energy costs. Desiccant materials such as silica gels and certain salt compounds naturally absorb moisture from humid air and release the moisture when heated, a feature that makes them re-useable. In a solar desiccant system, the sun provides the energy to recharge the desiccants. Once the air has been dehumidified, it can be chilled by evaporative cooling or other methods to provide relatively cool, dry air. This can greatly reduce cooling requirements

Evaporative cooling :

Evaporation occurs whenever the vapour pressure of water is lesser than the water vapour in the surrounding atmosphere. The phase change of water

from liquid to the vapour state is accompanied by the release of a large quantity of sensible heat from the air that lowers the temperature of air while its moisture content increases. The provision of shading and the supply of cool, dry air will enhance the process of evaporative cooling. Evaporative cooling techniques can be broadly classified as passive and hybrid. Passive direct systems include the use of vegetation for evapotranspiration, as well as the use of fountains, pools and ponds where the evaporation of water results in lower temperature in the room. An important technique known as 'Volume cooler' is used in traditional architecture. The system is based on the use of a tower where water contained in a jar or spray is precipitated. External air introduced into the tower is cooled by evaporation and then transferred into the building. A contemporary version of this technique uses a wet cellulose pad installed at the top of a downdraft tower, which cools the incoming air. Passive indirect evaporative cooling techniques include roof spray and roof pond systems.

Roof spray :

The exterior surface of the roof is kept wet using sprayers. The sensible heat of the roof surface is converted into latent heat of vaporisation as the water evaporates. This cools the roof surface and a temperature gradient is created between the inside and outside surfaces causing cooling of the building. A reduction in cooling load of about 25% has been observed. A threshold condition for the system is that the temperature of the roof should be greater than that of air.

There are, however, a number of problems associated with this system, not least of which is the adequate availability of water. Also it might not be cost effective, as a result of high maintenance costs and also problems due to inadequate water proofing of the roof.

Roof pond :

The roof pond consists of a shaded water pond over an non-insulated concrete roof. Evaporation of water to the dry atmosphere occurs during day and nighttime. The temperature within the space falls as the ceiling acts as a radiant cooling panel for the space, without increasing indoor humidity levels. The limitation of this technique is that it is confined only to single storey structure with flat, concrete roof and also the capital cost is quite high.

Earth cooling tubes :

These are long pipes buried underground with one end connected to the house and the other end to the outside. Hot exterior air is drawn through these pipes where it gives up some of its heat to the soil, which is at a much lower temperature at a depth of 3m to 4m below the surface. This cool air is then introduced into the house.

Special problems associated with these systems are possible condensation of water within the pipes or evaporation of accumulated water and control of the system. The lack of detailed data about the performance of such systems hinders the large-scale use of such systems.

Earth-sheltered buildings :

During the summer, soil temperatures at certain depths are considerably lower than ambient air temperature, thus providing an important source for dissipation of a building's excess heat. Conduction or convection can achieve heat dissipation to the ground. Earth sheltering achieves cooling by conduction where part of the building envelope is in direct contact with the soil. Totally underground buildings offer many additional advantages including protection from noise, dust, radiation and storms, limited air infiltration and potentially safety from fires. They provide benefits under both cooling and heating conditions, however the potential for large scale application of the technology are limited; high cost and poor day-lighting conditions being frequent problems.

On the other hand, building in partial contact with earth offer interesting cooling possibilities. Earth berming can considerably reduce solar heat gain and also increase heat loss to the surrounding soil, resulting in increase in comfort.

ACTIVE SOLAR ARCHITECTURE

It involves the use of solar collectors and other renewable energy systems like biomass to support the solar passive features as they allow a greater degree of control over the internal climate and make the whole system more precise. Active solar systems use solar panels for heat collection and electrically driven pumps or fans to transport the heat or cold to the required spaces. Electronic devices are used to regulate the collection, storage and distribution of heat within the system. Hybrid systems using a balanced

combination of active and passive features provide the best performance.

Active solar systems :**Active heating :**

In active systems, solar collectors are used to convert sun's energy into useful heat for hot water, space heating or industrial processes. Flat-plate collectors are typically used for this purpose. These most often use light-absorbing plates made of dark coloured material such as metal, rubber or plastic that are covered with glass. The plates transfer the heat to a fluid; usually air or water flowing below them and the fluid is used for immediate heating or stored for later use. There are two basic types of liquid based active systems- open loop and closed loop. An open loop system circulates potable water itself, through the collector. In closed loop systems, the circulating fluid is kept separate from the system used for potable water supply. This system is mainly used to prevent the freezing of water within the collector system. However, there is no need to go in for such a system in India, as freezing of water is not a possibility. Also closed loop systems are less efficient as the heat exchanger used in the system causes a loss of upto 10 degrees in the temperature of water, at the same time, one has to reckon with the extra cost of the heat exchanger as well as the circulating pumps. Compared to these, Thermosiphon systems are more convenient and simple.

In Thermosiphon systems, the water circulates from the collector to the storage tank by natural convection and gravity. As long as the absorber keeps collecting heat,

water keeps being heated in the collector and rises into the storage tank, placed slightly above (at least 50 cm). The cold water in the tank runs into the collector to replace the water discharged into the tank. The circulation stops when there is no incident radiation. Thermosyphon systems are simple, relatively inexpensive and require little maintenance and can be used for domestic applications.

Other devices such as solar cookers, water distillation systems, solar dryers, etc. have been developed which can be used to reduce energy requirements in domestic households and in industrial applications.

Active cooling

Absorption cooling systems transfer a heated liquid from the solar collector to

run a generator or a boiler activating the refrigeration loop which cools a storage reservoir from which cool air is turbine can also be powered by solar energy to run a compressed air-conditioner or water cooler.

Solar refrigeration is independent of electric supply and without any moving parts, for example, Zeolite refrigerator.

Thus solar efficient building designs, popularly known as Solar architecture, offer an exceptional opportunity for energy conservation through harnessing of solar energy. Heating and cooling of building consume a significant amount of energy. Thus it has been recognized that this "NEAR TO NATURE" technology can play a significant role in the building industry now and in future.



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"... Science is a thing common to all men in its conclusions, open to all in its methods, available to all in its results:

it is international in its very nature...

Therefore it is easier for men of science or those strongly influenced by science to grow into the international spirit..."

- Sri Aurobindo

Colonial Planning Practice and the Consequence of Colonial Urban Form

Ar. Suvaj Mohanty

".....the one which at least six generations of the third world have learnt to view as a prerequisite for their liberation. This colonialism colonizes minds in addition to bodies and it releases forces within the same to alter their cultural priorities once for all.....in the process, it helps generalize the concept of the modern west from a geographical and temporary entity to a psychological synchronisation. The west is now everywhere , within the west and outside; in structures and in mind." (Ashis Nandy in the book - Intimate Enemy: loss and recovery of self under colonialism 1983)

The words reflect the deep rooted impact of colonialism till date after six decades of independence. The 16th century saw the spread of dominance of western power and then came the industrial revolution which changed the lives of the people not only in Europe but also elsewhere. It further led to the pressing demand for raw materials which made many countries venerable targets of the western world. This in turn lead to the colonisation of various countries. The term colonisation as termed by Emerson is "...the establishment and maintenance, for an extended time, of rule over an alien people that is separate from and subordinate to the ruling power" (pg. 204 SUW). The two main forms of colonization were the desire for a space of living and the extraction of

riches. Within most of the empires there were two most distinct kinds of colonies which were the settled and the exploited or were the black and whites who were treated very differently. The colonisation of Latin America by the Spanish and the Portuguese started from the 16th century which was based mainly for the extraction of precious metals and the exploitation of cheap labour. In India first came the Portuguese and then the East India Company (U.K) around the 18th century for trade but who later set up their authority. Africa saw the worst faces of colonialism which included the human slave trade from 1880's.

The traditional cities in the pre colonial period had their relation of their forms to socio-cultural influences which included social set up, religious beliefs, family, clan structure, etc. The style of housing was based on availability of local resources and the climatic, economic and political conditions. But the colonial cities were quite different from the traditional cities. They were developed with three main ideologies. The first and the foremost ideology was state control. Here the colonial governments expressed their authority through the physical forms of magnificent buildings, ports, cities, etc. The second ideology was 'capitalist' which aimed at extraction and minimal public expenditure to keep their profits high. The

third ideology which was more evident from the British was to bring about a utopian concept. The intention was to create an ideal place of living by experimenting with the various forms of socio-cultural organisation.

The major draw back of the colonial planning practice was the export of ideas from the western cities which did not suit the local conditions. Like that in the case of Latin America, the Spanish settlers followed the "law of Indies" which relates to plans designed in Spain and then applied in colonial cities. The Spanish mainly followed chequer board plans with square boxes and the squares in the centre housing the mail building blocks. The Portuguese though less systematic than the Spanish used a grid iron pattern for cities like Rio de Janeiro in Brazil. This lacked future considerations and with the increase of population resulted in chaos as the city grew beyond its colonial grid cores. Even after the master plan for the city was done in 1930 by Le Corbusure the problems embedded during the colonial times failed to disappear completely. The urban form in Latin America mainly focused on transportation routes for mineral extraction. Their development lacked an insight to looking at the problem of indigenous population and aimed at only extraction and control of labour.

The colonisation of Africa had six countries involved in it, but the attitudes of all of them were similar for their colonies. Even here the main aim was extraction of raw materials. The networking of road links was based on easy transportation of goods. The settlement was

based on extraction and the existing settlements resulted in hybrid cities with distinct vernacular and European sectors such as the cities of Tunis, Rabat , Lagos, etc. Even Cairo showed the additions of European style. The French focused only on profit making, so they built small towns with minimal requirements towards the south of Sahara. The most important feature of the colonisation of Africa was based on 'segregation'. Africa was termed as 'a white man's grave' due to a number of diseases such as yellow fever, plague, and malaria. So the Europeans segregated their residential areas with buffer zones such as green belts or railway lines. This was an illogical argument and the real motive was to display their supremacy by staying away from the masses. The African colonies where the locals lived were miserable and lacked basic civic amenities even after paying heavy taxes. Scale of demand, low wages, and poverty have denied most Africans the basic needs of life and survival even today. The ill effects of colonisation are evident even today with poor sanitary system, health issues, and discrimination on ethnic identity.

The British colonisation was the most impressive in history. In 1914 it had the largest empire which had a population of 400 million in places as diverse as India, Australia, Egypt, West Indies and Canada. The development of the British Empire from the 16th century to present day is based on three phases. The first phase was the era of old colonial empire which was based with the only principles of trade .The second phase which began from the mid Victorian period was known as 'age of new imperialism'. This resulted in free trade,

expansion of territories in Asia and Africa. The third phase started from 1914 to present day is that of the commonwealth of independent nations bonded by friendly relations. The British model of town planning was typical in its way and their effect is still seen in major cities of the world. The main component was based on a policy of deliberate urbanisation. The British planned towns in advance of the settlements and stressed land rights allocations. They had wide streets laid out in a grid iron pattern and had standard size rectangular plots. They also aimed at creating community interactive areas such as squares and also created a distinction between the town and country side by use of green belts. We will now focus on colonisation of India with a special in depth view to Calcutta, the then capital of the British crown.

The British came to India under the banner of the East India Company for trade. They did not interfere with the internal planning system of cities at that time. As in Madras the Europeans had their separate built residential areas but the locals lived in traditional types of cluster houses. The houses were made using vernacular materials of mud bricks, thatched roofing with wells in the courtyard but the only difference was that they had to align them with the broad streets laid out by the company. Then came the new face of the British authority which aimed at centralisation of decisions. Then came up major changes of developing new townships and giving new colonial face to the existing ones. As the railways came up the cities began to be linked easily. As the colonial power aimed at maximising their profit

traditional local economy collapsed and stress was given to textiles, spices and raw materials demanded by the crown. The cities of Kanpur, Delhi, and Faizabad became a hub for economic activity because of the establishment of factories. Whereas the old cities of Lucknow, Farrakhabad, and Kalpi then declined. The major change was increased urbanization as the economy in rural areas collapsed. This resulted in slums as cities swelled and there was a major threat to health and sanitation. The colonial government was anxious to avoid all unnecessary expense and failure to consider the needs of the community resulted in the breaking of the service system. The British developed cities such as Pune, Shimla, and Ooty for summer migration rather than improve the conditions of the existing cities. While discussing the drawbacks the colonial system brought to the Indian sub-continent will be unfair not to discuss about the spectacular cities it established such as Calcutta?

Calcutta was designed by the colonial British as a grand capital city. It's a city of distinct contrast and contradictions. It had assimilated strong British influence and had to overcome the limitations of its colonial legacy to bring about its own unique identity. The importance of Calcutta came up because of its strategic location at the banks of the river Hooghly and which acted as a port for the transportation of goods. The city was established by Job Charnok by merging the three villages of Suntanati, Kalikata and Gobindpur. After the battle of Plassey the British took control of the place. Calcutta was the centre of administration after the capital shifted from Delhi. The city's planning structure showed

a sharp contrast between the European settlement and of the common people. The Europeans had access to a lavish lifestyle where else the common people stayed in the areas which were congested and unplanned. The areas where the British lived displayed the best examples of town planning with elegant bungalows, broad streets, clubs, and other recreational activities. The growth pattern was of a linear type because of the development along the river. The city was planned with a huge open field called maiden at its centre, which served as the lungs of the city. The British influence was evident from the houses built at that time. The architecture reflected indo-saranic style which showed the blend of Indian and British styles. The houses toward the south of Park Street display this style. In 1856 the tram was established which gave the city a new boost in communication. The places along the river front rose up as industrial areas which helped in easier transportation of goods.

During the post colonial period the spatial divisions of the city still existed. The native upper class, rich land lords, and various political leaders took up the privileged space which once served for the colonizers. The deep rooted seeds of social stratification planted by the colonial government years back are still evident now. The divide is such that in many colonial cities like Bangalore even today the areas around brigade road (British residential enclaves) people speak English and have a western style of living. And in other places like majestic (a market for the common man during colonial period) people use vernacular language and wear

traditional costumes.

Another important phase was the partition of the country. A huge number of refugees came from East Pakistan which resulted in a large number of slum developments in Kolkatta. The post colonial phase remained much of the racial divisions being replaced by the class divisions. The major market areas like Boro bazaar or the new market areas having their infrastructure deficits increased over the time. The negligence in vitalization of the planning system has resulted in the congested lanes and by lanes with poor drainage and sanitary facilities. Calcutta represents a typical colonial city which shows the best of the buildings yet it's also home to a large slum population.

The city is keeping its growth pattern as that of greater Kolkata that includes planned extended portions like Saltlakes which houses 250,000 residences and has no slums. This is a significant change where the posh and well to do people move away from cramped city limits. Though the phases of colonialism have ended, the presence of the west has not. The coming of a large investment companies from the west have transformed the silhouette of most Indian cities. The use of glass and steel structures is being used, imitating western cities, even though those designs do not suit the climatic conditions. The post colonial planning system is very complex as redeveloping these cites have lot of inter related factors which relates to issues like employment and minimal wage rates for labourers. Unless these issues are addressed a check on slum development cannot be addressed. Barring a dynamic

economic turnout the story of Calcutta like most other colonial cities is in search of maintaining its individual identity.

When the British authority is under criticism for its policies leading to crude conditions prevailing under colonisation, an insight into British thinking is found in the book "The Lasting Legacy" by Sir Kenneth Blackburne who was a colonial officer during that period. There he explains the aims to colonise cities were primarily strategic like in many cases to prevent German encroachments and not just because these countries were treasure houses. He even mentioned that the military ports established at Gambia, Sierra etc were based with an objective to eliminate slave trade. The motive of Britain in those times was to build a network of roads and ports for their convenience in trading and had no intension in governance. They set up buildings because they needed it for their infrastructure. But then he plunged into administrative matters because of the growing insecurity in the regions and to sustain their trading activities. He admits the blunder was to give a hurried independence in many colonies without guiding the people to self governance. The positive aspect of the colonial rule which was a more lasting contribution of Britain to her colonies was not by government but by individual Britons who spread the Christian gospel overseas and also the light of education to remove the darkness of superstitions and blind beliefs.

But these arguments look insignificant when dire consequences of colonial system is still reflected today. The most serious

threat it possessed was an uncontrolled tidal urban growth. This is the main cause behind most of the problems of the developing countries. This unprecedented urban growth has lead to the poor living condition of people and ineffective implementation of planning systems. The solution lies in strategies to relieve pressure on bigger cities and at the same time improve services for the rural population in an aim to develop small and medium sized towns. This can be done by improving the specialised skills which declined in colonial periods. The economic integration at national and global level also influences the urban –rural economy today. An attempt should be made to bring the rural products to global markets. A healthy agricultural growth with townships supporting by them could reduce the urban rural migration trends. The need is for a self sustained rural economy with a balanced growth which was neglected during colonial governments.

Another damaging factor which colonisation lead to was the wiping up of cultural trends with an argument of it posing a threat in issues of health and defence. The colonial cities thus evolved were not designed for the majority of the people living there but for a handful of people to serve their selfish motives. The town planning which was silently used as a tool by colonial governments to display supremacy and racial discrimination should now be used to bring about a healthy growth for the entire community.

Thought colonisation period seems to have ended a phase of neo-colonialism is being faced by the developing countries. This is worse than even colonisation for here the stronger countries exploit without

even taking responsibility of it. This is clearly visible in countries of Latin America and Africa today by the western powers. It is indeed a long way of struggle for the future of the developing countries as they search for a new identity for themselves after years of being exploited...!!!

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To hope for a true change of human life without a change of human nature an irrational and unspiritual proposition; it is to ask for something unnatural and unreal, an impossible miracle.

– Sri Aurobindo

Acoustics of Buildings

Dr. Sarat Chandra Mishra

Acoustics is the science of sound and its production, propagation and relation with the sense of hearing. We all like to hear that sound in which the notes come rhythmically and continuously to the ear within the required intensity level. Such sound is called musical sound. There is harmony among the syllables, intelligibility and clarity of thought in musical sound. Otherwise it is noise which lacks all these qualities. It has its first adverse effect on mind, vital and body. We all know the different situations where noise is created. One of them is the improper design of a room with inadequate internal arrangements. It is avoided with proper knowledge the acoustics of buildings. It deals with the required design of rooms, conference halls, auditorium etc. with an aim of obtaining optimum listening conditions and reducing noise.

Let's imagine a source producing some sound continuously in a hall. Some of the sound energy is absorbed by the walls and other materials present in the hall and the rest is reflected. Hence energy density (energy/ unit volume) in the hall reaches a steady value where the time rate of energy generated by the source becomes equal to the time rate of energy lost through absorption. If the source suddenly stops the sound does not stop immediately but persists for some time. It is due to the repeated reflection of sound from the walls and other materials. Each reflection is associated with some absorption of energy until the intensity reaching the ear is no longer audible. This gradual

decaying of sound is known as Reverberation and the time required for the sound to fall below the threshold audibility is called the reverberation time (T).

In order that a sound should be heard distinctly by a normal human ear, each separate syllable or note must have sufficient intensity and it should not interfere with the syllables following it. The repeated reflection from the walls increases the intensity and hence loudness but too much of it may seriously affect clarity, as it results in longer reverberation time. On the other hand if the absorption is enhanced the reverberation time decreases so that the syllables become distinct but loudness may be reduced. Hence a compromise is achieved and each hall or auditorium should be designed to have an optimum reverberation time, i.e. the best suitable time of reverberation as per requirement.

From a wide range of experiments Wallace Sabine in 1895 obtained an equation relating T with other physical factors of the room like its volume (V), the area (A) and nature of the surface of the materials present in it. It is given by

$$T = 0.049V / \Sigma kA$$

where ΣkA is the total absorption of sound of all materials present inside the room. It is computed by the area A of each material with its absorption coefficient k and then adding these products together. However the desired value of T is dictated by the purpose.

A room in which the reverberation of sound increases loudness is called a live room. It is achieved at the cost of clarity of syllables and is desired in the design of concert halls. In such cases the mean absorption co-efficient of all materials should be less than **0.4**. On the other hand, if the mean absorption coefficient is above **0.4** reverberation is small and the room is called a dead room. We require neither a perfectly live room nor a perfectly dead room.

In a lecture hall or class room, excessive reverberation time is undesirable. It affects clarity. Hence practical remedy is to cover part of the walls with sound absorbent materials, usually porous substances like felt, compressed fiber boards, rough plaster or draperies. The regular motion of air molecules which constitute the sound waves are then converted into irregular motions in the porous materials and thus less sound is reflected. Experimentally it has been found that a reverberation time of about 0.8 second in an auditorium of 50000 cubic feet gives the best intelligibility, where as, if the volume is 60000 cubic feet it increases to around 1.5 second. Reverberation time is also affected by presence of audience. Hence, as a remedy for the probable undesirable effects in a less packed auditorium the seats should be of materials of

large absorption coefficient. The correct position of the reflector and absorbers should be considered too for satisfactory results in a hall. A good reflector behind and on either side of the speaker and good absorbers behind the audience guides the sound wave in right direction and path. There should not be curved walls and domed ceilings in the hall as they tend to focus sound to some specific areas.

For an enclosure of public speech, reverberation time should be short. This is best realized in an open air auditorium or a hall with too many open windows. But such auditoriums hardly help a speaker so far as intensity of sound is concerned. In such cases, microphones and loudspeakers need to be used.

For a work room or factory, reverberation time should be of much smaller value as sound deadening results in greater efficiency for the workers. There should be sufficient absorbing materials, open windows and rough plastering of walls in these cases.

To sum up, the acoustic feature in design of an auditorium or room may be investigated much before the structure is built, keeping in view clearly the purpose. It is furnished accordingly with required number of absorbers and reflectors.

□□□

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Kitchen Concepts

Prem Rout

All kitchen designs come with a stove, refrigerator and a sink. The arrangement of the kitchen makes the kitchen stand out from the rest of the house. Kitchens may become a place where the family spends time chatting and making the family meals together and the open dining area with the kitchen provides the room.

DESIGN :

Size Really Does Matter in a Kitchen: The size of a kitchen should have a roomy area that allows more than one person at a time to be in the kitchen at a time. The way you arrange the appliances and the location of the sink as a lot to do with how many people can help with preparing the meals. A sink on one wall, another wall with the stove and the refrigerator on another allows for different work areas in the family kitchen.

The Old Kitchen Transformed: With the kitchen islands available and the many different style window designs, you could transform an ordinary kitchen into a showcase with a little work. Open up the kitchen with an island as the center of the kitchen surrounded by the appliances and move the traditional table to the open dining area.

The sink can be on the outside wall with a window size that allows you to gaze outside while doing the dishes or preparing a meal. Windows that allow opening provide an outdoorsy feeling when you become the only one room. You can listen to the birds sing while preparing a meal in a spacious kitchen area.

The Open Dining/Kitchen Area: The area of the dining/kitchen area opens up a completely different look for any kitchen. The area transforms into a family gathering place and finds the family working together and preparing meals together while having their own work areas due to increase in size.

As any family will see, the kitchen is an important room in the house when you transform it into a beautifully designed space.

CABINETS :

Placing cabinets around the kitchen allows for many areas of storage and allows you set the kitchen up for easy access to things needed at every work area. Cabinets by the refrigerator, cabinets by the stove and cabinets by the sink allows for convenience.

Countertops and cabinets add to the beauty of the kitchen.

Cabinets under the Center Island: The center island provides another place for keeping pots and pan lids and maybe a drawer for silverware. Another drawer used for pens and paper while you are sitting at the island thinking about the grocery list. The island cabinets leave room around the room for the dishwasher, built in microwave and the garbage compactor.

Kitchens is the New Cabinets with microwaves at a lower level designed for ease and come with a stylish front that matches your cabinet style. Not only does this leave more room on the counter tops but hides the appliance when not in use. This type of design

for kitchens with no cluttering of the other areas in the kitchen gives your newly designed kitchen an open look.

Going Dark or Light: Many cabinets today come in dark or light stains and colors. People start turning to colors rather than a stain for the front of the cabinets. White cabinets brighten a kitchen, or blue and green, people have decided colors bring out the cabinets. The traditional cabinets stained in dark or light still holds the beauty the homeowner when designing a lovely kitchen for a warming and inviting feeling.

Colors Make a Difference: Kitchens designed with all white walls and appliances may make the room appear all in one, where the stained cabinets define the kitchen with definition. The many designs and choices for kitchen cabinets fill a need for anyone adding dimension or definition to the kitchen.

LARDER :

If you're designing or renovating your dream kitchen, you might want to consider including a larder. A larder is a great option, and will prove immensely useful and time saving in the long run! They come in plain "vanilla" models, as well as fancy bells and whistles models.

What is a Larder? Most basically, a larder is a cool place to store food before use. In the older days, this was a cool room in the house, perhaps in the cellar. These days, this term refers to a cooling drawer, or a small, conveniently placed fridge nearer to the food prep area.

Why Include a Larder? A larder can be a great place to store foods that you have already prepared, and need to be kept cool until you're ready to serve them. Larders can also be a great time saving tool when preparing meals. Prep your ingredients, such as vegetables that need to be chopped and peeled, and measure out

what you need, like butter and sour cream, and place them in the larder near your prep area until you are ready to use them.

What is a Modern Larder ? A modern larder is, basically, a small fridge, located near the food prep area; so that you can easily and quickly access the ingredients and foods you need to prepare your fabulous meals. You can also use these larders to chill wine before dinner.

In short, a larder is a nice little luxury to include in your kitchen, that won't cost a ton of money. Just the presence of a larder will make a kitchen look sleek, modern, and professional. You're sure to be pleased if you choose to add a larder to your kitchen renovation and redesign plans. Not only will it improve the look of your kitchen, but it will also add convenience, and shave time off of your meal preparations.

KITCHEN SINK

One essential item that must be considered in every kitchen renovation and redesign is the kitchen sink. Unfortunately, this is a kitchen element that most people think very little about, even though it can completely change the look and feel of the kitchen! The kitchen sink and tap does not just need to be a place to wash dishes. If you choose carefully, the sink can be an important design element, and a thing of beauty.

What Material? Kitchen sinks are available in many materials. Stainless steel is the most common. It's easy to clean and install, and comes in a wide range of prices. However, stainless steel can scratch very easily. It can also become dented if something very heavy is dropped on it, and can make sounds like running water and garbage disposals seem much louder. Porcelain sinks are also available, and are actually (in most cases) a base of cast iron or other

metal, with a porcelain coating applied over top. These are very beautiful, but can chip and stain rather easily.

Acrylic is a common material, and while not as resistant to heat as other materials, are stain resistant, and newer models even come with germ fighting properties that are “built in.” The last of the common options are solid surface materials, which come by many different brand names. These sinks are made of materials that mimic stone, or can be purchased in a huge variety of colors and textures. These are heat and stain resistant. Shape it anyway you like! What shape would you like? Double bowl sinks are common, but newer models often have three bowls. Usually these are made with two large bowls, and one small one for the garbage disposal. This smaller bowl doesn’t have to be in the middle, it can be in the corner, or off to the side. A very popular option is to have one or both bowls extra deep. This is great for washing very large pots and pans. Taps are available in a myriad of styles. Brass, polished stainless steel, satin or brushed finished metals, the list goes on and on. For an ultra sleek and clean look, you may want to choose a faucet that can be pulled out and used as a sprayer, so that the faucet is all one piece. You can also consider a tap that can be raised to accommodate tall pots.

APPLIANCES

Accent your kitchen with appliances that provide you with everything you need for convenience. Without knocking out a wall or doing a big remodeling job, you can add appliances that allow for more room in the kitchen. Any size kitchen has room for the newer appliances of today.

Appliances add beauty and elegance to a kitchen without compromising the area. Because

many different floor plans require different arrangement of the appliances, you can combine cabinets and appliances together making even more room in the kitchen. Choose Appliances that fit for the kitchen, you may want a stove, refrigerator, dishwasher, compactor and a microwave. When you install these appliances in the kitchen, you only need to take a little room so as not to make a small kitchen even smaller. Adding the right colored appliances may contribute to the room looking bigger after installation of the appliances. The microwave can be built-in underneath the counter top; an innovation in technology allows this new way to mount a microwave. The dishwasher and compactor can fit on each side of the kitchen sink and the stove and refrigerator opposite each other.

Kitchen Appliances for Need and Convenience:

Kitchen appliances come in different styles and sizes. The refrigerator can be a top freezer or a bottom freezer along with a side-by-side. The stove comes as an oven and stovetop or a separate oven unit and a separate counter top stovetop.

Dishwashers and compactors offer convenience more than need in a kitchen, but do cut out the open garbage area and dirty dishes in the sink. These are under the counter units and take no added floor space. Kitchens with a Flare Colors and textures found in appliances fit together nicely and match any type of cabinets and the other kitchen décor. If you find your in need of appliances, check the new technology that seem to evolve every day, that adds more surprises for the home owner looking for a smarter kitchen.

INDUCTION HOB

New appliances are a huge consideration when renovating and redesigning your kitchen.

What type of hob would you like to install?

An induction hob is a good choice for any household, and offers a slight edge over conventional gas or electric hobs.

About Hobs: Hobs are available in a wide range of configurations, and are commonly found in two sizes, 60cm and 70cm wide. The wider, 70cm models can still fit into a 60cm space by overlapping the work surfaces slightly. Traditionally, there are four burners on a hob, but some models are now available with five or more burners, and some are available with specialty burners, like a wok burner, or a burner for fish kettles. Traditionally, there will be one large burner, two medium burners, and one small simmer burner.

About Induction Cooking : Induction hobs use induction heating, which use an induction coil, and cookware that is ferromagnetic coating to heat the food. It's important to note that this type of induction cooking does not work with cookware like glass, aluminum, and most stainless steel. Induction cooking has an edge over the usual gas or electric cooking, because it heats rapidly, improves thermal efficiency, and offers the same controllability as gas

cooking. A pot of water can begin to boil at the points where the burner is in contact with the pot in as few as five seconds, and can be reduced to a simmer in as little as a couple of seconds. This time it takes to boil water will vary though, depending on the power or wattage that is being used.

An induction hob costs more to buy, but they use about half the amount of electricity as an electric hob, so it will save money over an electric hob over time.

Safety and Convenience: Induction cooking is considered to be safer than gas or electric because there are no open flames, and the burner itself is not hot to the touch. The pan becomes hot, but the hob does not. These induction hobs are easy to clean, since they are one large flat surface. They also do not have problems with food getting burnt if a pot boils over, because the surface itself does not get hot. Induction hobs are a great choice. These hobs offer the gold standard in cooking for both convenience, quality, and safety. There are several models to choose from, but any one of them is sure to fast become your favorite kitchen appliance!



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ମଧୁର ଜଳାଶୟର ଅତିପୋଷଣ ସମସ୍ୟା ଓ ସରଳ ସମାଧାନ

ଶ୍ରୀଅରବିନ୍ଦ ପୂର୍ଣ୍ଣାଙ୍ଗ ଶିକ୍ଷାକେନ୍ଦ୍ର
ଖଲିକୋଟ ଦ୍ୱାରା ପ୍ରସ୍ତୁତ ପ୍ରକଳ୍ପ

ଆଜିକାଲିର ବର୍ଷିତ ଜନସଂଖ୍ୟା ମାନବ ଜାତି ପାଇଁ ଏକ ବଡ଼ ସମସ୍ୟା । ତା’ ସହ ସେମାନଙ୍କ ଦ୍ୱାରା ଉତ୍ପନ୍ନ ଆବର୍ଜନା ବି ନୂତନ ସମସ୍ୟାର ଉତ୍ପାଦନ କରିବା ସହଜ ତଥା ବିଭିନ୍ନ ପ୍ରକାର ଜୈବନିମ୍ନକରଣ ଯୋଗ୍ୟ ଓ ଅଯୋଗ୍ୟ ଆବର୍ଜନା ତଥା ସେଗୁଡ଼ିକର ସୁପରିଚାଳନା ନିତାନ୍ତ ଆବଶ୍ୟକ । ଅନ୍ୟଥା ଏହା ସୃଷ୍ଟି କରିପାରେ ସମସ୍ୟା ଯାହାକି କେବଳ ମନୁଷ୍ୟ ଜାତି ନୁହେଁ ଅନ୍ୟାନ୍ୟ ପ୍ରାଣୀମାନଙ୍କ ଜୀବନ ଧାରଣ ପ୍ରଣାଳୀକୁ ଓ ପ୍ରକୃତିର କାର୍ଯ୍ୟରେ ବାଧା ସୃଷ୍ଟିକରେ... ଯେମିତି ଏଇ ଦେଖନ୍ତୁ, ପ୍ରତ୍ୟେକ ଗ୍ରାମ ଓ ସହରମାନଙ୍କରେ ଥିବା ଜଳାଶୟର ଅବସ୍ଥା । ଗାଁ ବା ସହରର ମଇଳା ଜଳ ସିଧାସଳଖ ଜଳାଶୟରେ ପ୍ରବେଶ କରେ ଓ ବିଭିନ୍ନ ଜଳଜ ଉଦ୍ଭିଦକୁ ଜାତ କରେ ଯାହାକି ସମ୍ପୂର୍ଣ୍ଣ ଜଳାଶୟରେ ଭର୍ତ୍ତି ହୋଇ ଜଳାଶୟକୁ ବ୍ୟବହାର ନିମନ୍ତେ ଅଯୋଗ୍ୟ କରି ପକାଏ । କିନ୍ତୁ ପରିସ୍ଥିତିରେ ପଡ଼ି ଜନସାଧାରଣ ଏହାକୁ ବ୍ୟବହାର କରିଥାନ୍ତି ଓ ବିଭିନ୍ନ ରୋଗ ସୃଷ୍ଟିର କାରଣ ହୋଇଥାନ୍ତି, ଏହି ଉଦ୍ଭିଦ ଗୁଡ଼ିକର ବୃଦ୍ଧି ଆଜିକାଲି ବିଭିନ୍ନ ସ୍ଥାନରେ ଏକ ସମସ୍ୟା । ଏହି ସମସ୍ୟା ଓ ତା’ ର ସମାଧାନ ଆଜିର ଏହି ପ୍ରକଳ୍ପର ମୁଖ୍ୟ ଲକ୍ଷ୍ୟ.....



ତେବେ ଆସନ୍ତୁ ଦେଖିବା, ଏ ସମସ୍ୟାଟି କ’ଣ ଓ ତାର ସମାଧାନ କ’ଣ

୧. ଭାରତ ଏକ ଜନ ବହୁଳ ରାଷ୍ଟ୍ର , ଜନସଂଖ୍ୟା ବୃଦ୍ଧି ଏକ ସମସ୍ୟା ଲୋକ ମାନଙ୍କ ଦ୍ୱାରା ସୃଷ୍ଟି ହୁଏ ଅନେକ ଘର... ।
୨. ଅନେକ ଘର ଓ ଅନେକ ଲୋକ ସୃଷ୍ଟି କରନ୍ତି ଆବର୍ଜନା । ଜାଣିପାରନ୍ତିନି ତାହାର ସୁପରିଚାଳନା.... ।
୩. ବର୍ଷାଜଳ ସହ ସାହି ବା ଘରର ଆବର୍ଜନା ମିଶିଯାଏ ନିକଟସ୍ଥ ଜଳାଶୟରେ...ଘରୋଇ ଆବର୍ଜନା , ପଶୁ ବର୍ଜ୍ୟବସ୍ତୁ ନର୍ଦ୍ଦମା ଆବର୍ଜନା ଓ ଡିଟର୍ଜେଣ୍ଟ ଆଦିରୁ ଆସୁଥିବା ପୋଷକ ପଦାର୍ଥ ଜଳରେ ପୋଷକ

ପଦାର୍ଥ । ବଢ଼ିଯିବାକୁ କୁହାଯାଏ ଯୁଗ୍ମୋଫିକେସନ୍ ବା ଅତିପୋଷଣ । ଅତ୍ୟାଧିକ ପୃଷ୍ଠିକର ଖାଦ୍ୟ ପାଇ ବଢ଼ିଗଲେ ଏହି ଉଦ୍ଭିଦର ବଂଶ.....ନାମ ନିଏ (ଶୈବାଳ ବିକାଶ) କରିଦିଏ । ଜଳର ଉପର ସ୍ତରକୁ ଆକ୍ଷାଦିତ । ଜଳରୁ ଦୂର୍ଗନ୍ଧ ବାହାରେ ତଦନୁସାରେ ଜନ୍ମ ନିଅନ୍ତି ଅତ୍ୟଧିକ ଅପଚରଣକ ଯେଉଁମାନେ ଏମାନଙ୍କ ଅପଚରଣ କରିଥାନ୍ତି । ବିଭିନ୍ନ ଜଳତର ଜୀବଙ୍କ ମୃତ୍ୟୁର କାରଣ ହୁଅନ୍ତି ଏମାନେ.....

ଦେଖନ୍ତୁ ଜଳଜ ଉଦ୍ଭିଦ ଗୁଡ଼ିକୁ ଜଳରୁ ହଟାଇବାରେ କେତେକ ପ୍ରୟାସ.....

ତତ୍କାରେ ବସି ଏହି ଉଦ୍ଭିଦଗୁଡ଼ିକୁ ବାହାର କରାଯିବାର ପ୍ରୟାସ । କିନ୍ତୁ ଏମାନଙ୍କୁ ଜଳାଶୟରୁ ବୋହି ଦୂରକୁ ନେଇଯିବାକୁ ହେବ ଯାହାକି ଏମାନେ ଜାଣି ନାହାନ୍ତି । ବାଉଁଶ ଦ୍ୱାରା ଏକାଠି କରି ରୁହାଗାଲେ ଏଗୁଡ଼ିକୁ ଯାହାକି ଶ୍ରମ ସାପେକ୍ଷ



ଓ ଅର୍ଥର ଅଯଥା ଖର୍ଚ୍ଚ । ମାଛ ଚାଷ ପାଇଁ ଏମାନେ ଜଳରେ ପ୍ରୟୋଗ କରୁଛନ୍ତି pesticide ଯାହାକି ଜଳକୁ ବ୍ୟବହାର ଅନୁପୋଯୋଗୀ କରାଏ ।

ନାଚାର ମନୁଷ୍ୟ-

ତଥାପି ଗାଧୋଇବାରେ ବ୍ୟବହୃତ ହୁଏ ଏହି ଜଳ ।
କୃଷି ପାଇଁ ବ୍ୟବହୃତ କରେ ଏ ଜଳ ଯାହାକି ଅନ୍ୟ ଜଳାଶୟକୁ ଏ ଉଦ୍ଭିଦ ଗୁଡ଼ିକ ବୋହି ନେବାରେ ସାହାଯ୍ୟ କରେ ।

ଏ ଉଦ୍ଭିଦ ସମ୍ପର୍କେ କିଛି

ଏହି ଉଦ୍ଭିଦର ନାମ - ବୋରଝାଞ୍ଜି । ଇଂରାଜୀ ନାମ - Pistia
ଜଳର pH - 6.5 - 7.0
ସର୍ବାଧିକ ଉଚ୍ଚତା- 5.0 - 20.0 cm
ବୃଦ୍ଧି - ଦ୍ରୁତ

ଏହା ଏକ ଜଳଜ ଉଦ୍ଭିଦ । ଏହାର ପତ୍ର ଓ ତେର ଥାଏ । ଏଥିରୁ ଉତ୍ପନ୍ନ ରେଶୁ ମାନଙ୍କ ଦ୍ୱାରା ଏମାନଙ୍କ ବଂଶବୃଦ୍ଧି ଘଟିଥାଏ । ରେଶୁ ଗୁଡ଼ିକ ଅତି ସୃଷ୍ଟ, ଗୋଟିଏ ଉଦ୍ଭିଦରୁ ହଜାର ହଜାର ସଂଖ୍ୟକ ନୂତନ ଉଦ୍ଭିଦ ଜାତ ହୁଅନ୍ତି । ସର୍ବଦା ଜଳରେ ଭାସି ବୁଲନ୍ତି ଓ ଜଳରୁ ବିଭିନ୍ନ ପୋଷକ ପଦାର୍ଥ ଗ୍ରହଣ କରି ବଢ଼ନ୍ତି ।

ନୂତନ ସମାଧାନ

ଗୋଟିଏ ଛୋଟ ପୋକ ଯିଏକି ଏ ଉଦ୍ଭିଦର ପତ୍ର ଗୁଡ଼ିକୁ ଖାଇ ଦେଇଥାଏ ।

ସ୍ଥାନୀୟ ନାମ - ଗୋପି ପୋକ
ଇଂରାଜୀ ନାମ -
Golden tortoise beetle
SCIENTIFIC NAME-



Charidotella

ଏହାର ଉପରି ଭାଗରେ ଏକ ସୁନେଲି ରଙ୍ଗର ସୁନ୍ଦର ପରଦା ଭଳି ଓ ଗୋଲେଇ ଆସ୍ତରଣ ଦେଖାଯାଏ । ତେଣୁ ପୋକଟିର

ନାମକରଣ ଏହିପରି । ଖୁବ୍ କମ୍ ଦୂର ଉଡ଼ିଯାଇପାରେ । ଗୋଟିଏ ପୋକ ୫ରୁ ୭ ଦିନ ରେ ଏପରି ଗୋଟିଏ ଉଦ୍ଭିଦକୁ ଖାଇପାରେ ।

ଥରେ ପିଲାମାନେ ଏହାକୁ ଖେଳିବା ନିମନ୍ତେ ବିଦ୍ୟାଳୟର ପୋଖରୀରୁ ଧରିଥିଲେ । ପୋଖରୀରେ ଏମାନଙ୍କ ସଂଖ୍ୟା ଅଧିକ ଥିଲା । ଏମାନେ ପିଣ୍ଡିଆ ଉଦ୍ଭିଦ ଗୁଡ଼ିକର ପତ୍ରଗୁଡ଼ିକୁ ଖାଇ ଦିଅନ୍ତି ଫଳରେ ଅବଶିଷ୍ଟ ତେର ଜଳରେ ଭାସି ପାରନ୍ତି ନାହିଁ । (କାରଣ ପତ୍ର ଗୁଡ଼ିକ ହିଁ ଏହାକୁ ଜଳରେ ଭାସିବାରେ ସାହାଯ୍ୟ କରନ୍ତି । ତେରଗୁଡ଼ିକ ଜଳରେ ବୁଡ଼ିଯାଇ ଅପଘଟିତ ହୋଇଯାନ୍ତି ଯଦ୍ୱାରା ଚିଲୁଡ଼ିମାନେ ଏହାକୁ ନିଜର ଖାଦ୍ୟ କରି ଖାଆନ୍ତି ।



ଏହାଦ୍ୱାରା ଉପକାର :

ଖାଦ୍ୟ ଶୃଙ୍ଖଳ ପୁନଃ ଉଦ୍ଭାବିତ ହୁଏ । ଜଳ ପରିସଫୁଳ୍ପ କାର୍ଯ୍ୟକ୍ଷମ ହୁଏ । ଜଳରେ BOD (biological oxygen demand) କମ୍ ହୁଏ । ଜଳତର ଜୀବମାନେ ବଞ୍ଚିପାରନ୍ତି । ଚିଲୁଡ଼ି ଓ ମାଛ ଚାଷ କରାଯାଇପାରେ । ଜଳ ପରିଷ୍କାର ହୁଏ । ଜଳ ସଂକଟ ଦୂର ହୁଏ । ରୋଗ ସୃଷ୍ଟିକାରୀ ଜୀବାଣୁ ମାନେ ସୃଷ୍ଟି ହୋଇପାରନ୍ତି ନାହିଁ । ପରିବେଶ ସୁରକ୍ଷିତ ରହେ । ମନୁଷ୍ୟମାନଙ୍କ ଗାଧୋଇବା ତଥା ଅନ୍ୟାନ୍ୟ କାର୍ଯ୍ୟରେ ବ୍ୟବହୃତ ହୁଏ । ଆର୍ଥିକ ଓ ପାରିଶ୍ରମିକ ଦୃଷ୍ଟିରୁ ଏହା ବହୁତ ମୂଲ୍ୟବାନ ସମାଧାନର ଉପାୟ । ଆଜି କାଲିର ଯୁଗ୍ମୋଫିକେସନ ଦ୍ୱାରା ହେଉଥିବା ମଧୁର ଜଳର ଦୂଷିତକରଣର ଏହା ସମାଧାନ ।



Sri Aurobindo Engineering & Technical Group: The Road Ahead

Er. B.K. Sinha

SAETG has been in existence for quite a few years now. While every member has contributed towards the cause and objective of the group in some capacity over the years, we are sure each one of us also believes that there is so much more to do than what has already been done.

There is a significant need to build the strength in our organisation to come together and do something different. SAETG needs to get better organised, through increased communication between its units and members, sharing of thoughts and ideas to make it a much more effective group. Needless to say it requires absolute sincerity from each one of its members.

Now it is time for each of us to think seriously about it and work with more commitment and sincerity to achieve the objective. Towards this here are few thoughts as our action plan for this year.

1. As the first step towards getting effectively organised and sharing our ideas, let's have a meet of all SAETG district convenors and other interested members at least once in a year
2. SAETG district convenors can also conduct similar district level meets to organise the team at Block levels to make it more effective and participative

Apart from these two key points we feel there are few other activities that can be taken up during this year.

1. SAETG monthly special pathachakra may be held in the residence of a member every month in rotation. It has been observed that this pathachakra plays an important role in organising the unit. District convenors and SAETG convenors are requested to ensure minimum of 12 pathachakras in every district.
2. In the last few annual conferences, we have felt the need to compile a list of SAETG

members in different parts of Orissa to help communicate to everyone regarding our activities and to build the organisation. We request all SAETG district convenors to compile and send us a list of the members of SAETG in their areas with details such as Name, Address, Phone, Mobile, e-mail etc.

3. While many of the schools have now constituted Sri Aurobindo Bigyana Parishada in their schools, there might still be some schools where this has not yet been implemented. It would be prudent on our part to identify such schools and work with them to organize the Bigyana Parishada. We request all the SAETG district convenors to work accordingly.
4. Similarly many schools, districts and zones are now organising school, district and zonal level science exhibitions. We request all the SAETG district convenors to continue their focus towards this and help organise such events in a way that meets our core objective and aspiration.
5. Workshops, seminars, awareness programs in schools and centers on safety, solid waste management, energy conservation continues to be our focus and we urge the SAETG district convenors to work towards it as before
6. Collecting engineering and technical issues faced by centers and schools in Orissa and then coming up with solution(s) that will address key issues of most of the schools and centers and can be easily shared with the concerned centers and schools

The points / actions mentioned above are some initial thoughts. There are many more areas where we can venture into and contribute. Let's all of us pray to the Sweet Mother to guide our thoughts and action every moment and make us effective instruments in Her work.

□□□

ଶ୍ରୀଅରବିନ୍ଦ ବିଜ୍ଞାନ ପରିଷଦ

ପ୍ରସାଦ ତ୍ରିପାଠୀ

ମାତୃଭବନ, କଟକ

ଓଡ଼ିଶାର ମାତୃ କର୍ମଧାରାରେ ବିଭିନ୍ନ ସମୟରେ ପ୍ରେରଣା ଅନୁଯାୟୀ ଅନେକ ନୂଆ ନୂଆ ଉଦ୍ୟମ ଆରମ୍ଭ କରାଯାଇଛି । ସେଥିମଧ୍ୟରୁ ଶ୍ରୀଅରବିନ୍ଦ ବିଜ୍ଞାନ ପରିଷଦ ଅନ୍ୟତମ । ଯଦିଓ ଏହା ଶ୍ରୀଅରବିନ୍ଦ ପୂର୍ଣ୍ଣାଙ୍ଗ ଶିକ୍ଷାକେନ୍ଦ୍ରକୁ ଆଧାର କରି ଆରମ୍ଭ କରାଯାଇଛି ତଥାପି ଶ୍ରୀଅରବିନ୍ଦ ଇଞ୍ଜିନିୟରିଂ ଏବଂ ଟେକନିକାଲ୍ ଗ୍ରୁପ୍‌ର ଏହା ଏକ ବିଭାଗ ରୂପେ ଆତ୍ମପ୍ରକାଶ କରିଛି ।

ଶ୍ରୀଅରବିନ୍ଦ ବିଜ୍ଞାନ ପରିଷଦ ବସ୍ତୁତଃ ଶ୍ରୀଅରବିନ୍ଦ ପୂର୍ଣ୍ଣାଙ୍ଗ ଶିକ୍ଷାକେନ୍ଦ୍ରମାନଙ୍କରେ ଅଧ୍ୟୟନ କରୁଥିବା ଏବଂ ବିଜ୍ଞାନ ପ୍ରତି ସ୍ୱତନ୍ତ୍ର ଆଗ୍ରହ ପ୍ରକାଶ କରୁଥିବା ଛାତ୍ରଛାତ୍ରୀମାନଙ୍କୁ ନେଇ ଗଠନ କରାଯାଇଛି । ଏଠାରେ କାହାରିକୁ ବାଧ୍ୟ କରାଯାଏ ନାହିଁ କି କାହାରିକୁ ବାରଣ କରାଯାଏ ନାହିଁ । ଯିଏ ଚାହେଁ ସେ ଏଥିରେ ଯୋଗଦାନ କରିପାରିବେ । ଏହାର ମୂଳ ଲକ୍ଷ୍ୟ ଯଦିଓ ବିଜ୍ଞାନରେ ଆଗ୍ରହ ସୃଷ୍ଟି ଭଳି ବୋଧ ହେଉଛି, ତଥାପି ଏହାର ବାସ୍ତବ ଲକ୍ଷ୍ୟ ତାହା ନୁହେଁ ।

ବିଜ୍ଞାନର ସ୍ୱରୂପ ହେଲା ନୂତନତ୍ୱକୁ ଖୋଜିବା । ପୁରାତନରେ ଆଦୌ ସନ୍ତୁଷ୍ଟ ନହେବା ଏବଂ ଯେତେଯେତେ ନୂତନତ୍ୱ ସନ୍ଧାନ ପାଉଥିବା ତାକୁ ଆଗ୍ରହ କରି ଆହୁରି ନୂତନତ୍ୱ ଦୃଷ୍ଟି ନିକ୍ଷେପ କରିବା । ସେଥିପାଇଁ କୌଣସି ବୈଜ୍ଞାନିକ ନିଜର ସନ୍ଧାନରେ ସନ୍ତୁଷ୍ଟ ହୋଇ ଅଟକି ଯାଆନ୍ତି ନାହିଁ ।

ଆମର କୁନି କୁନି ବୈଜ୍ଞାନିକମାନଙ୍କର ମଧ୍ୟ ଲକ୍ଷ୍ୟ କେବଳ ତାହା । ସେମାନେ ପୁରାତନକୁ ଅବିଶ୍ୱାସ କରନ୍ତି ନାହିଁ ମାତ୍ର ପୁରାତନରେ ସନ୍ତୁଷ୍ଟ ନୁହନ୍ତି । ସେମାନେ ନୂତନକୁ ଖୋଜନ୍ତି ମାତ୍ର ପ୍ରାପ୍ତି ପାଇଁ ବ୍ୟାକୁଳ ହୁଅନ୍ତି ନାହିଁ । ପ୍ରସ୍ତୁତି ପାଇଁ ସମଗ୍ର ଜୀବନ ବିତିଗଲେ ମଧ୍ୟ ତାହା ତାଙ୍କର ସାଧନା ବୋଲି ସେ ବିଶ୍ୱାସ କରନ୍ତି । ତାଙ୍କର ଖୋଜିବା କେବଳ ବିଜ୍ଞାନକୁ ନେଇ ସୀମିତ ନୁହେଁ ବରଂ ସେମାନେ ସବୁକିଛିକୁ ବିଜ୍ଞାନ ମଧ୍ୟକୁ ନେଇ ଯିବାପାଇଁ ଚେଷ୍ଟା କରନ୍ତି । ମା' ଯେତେବେଳେ ଜୀବନ ବଞ୍ଚିବାକୁ ମଧ୍ୟ ଏକ ବିଜ୍ଞାନ ବୋଲି ଆଖ୍ୟାୟିତ କରିଛନ୍ତି (*Science of living*), ସେତେବେଳେ ଆଉ ବିଜ୍ଞାନ ପଦବାଚ୍ୟ କିଏ ବା ନହେବ ? ସବୁକିଛିକୁ ବିଜ୍ଞାନର ପରିସୀମା ମଧ୍ୟକୁ

ଅଣାଯାଇପାରିବ । ଯେକୌଣସି ବସ୍ତୁ, ବିଷୟ, ବ୍ୟକ୍ତି ପ୍ରଭୃତିକୁ ନେଇ ଜଣେ କିଛି ନୂଆ ଖୋଜି ପାରିବ ଏବଂ ସେଥିରେ ଆନନ୍ଦ ପାଇ ପାରିବ ।

ଏହା ବ୍ୟତୀତ ସବୁଠାରୁ ଗୁରୁତ୍ୱପୂର୍ଣ୍ଣ କଥା ହେଲା ବିଜ୍ଞାନ ଜରିଆରେ ନୂତନ ଖୋଜୁ ଖୋଜୁ ଜଣେ ସର୍ବଶେଷରେ ନିଜର ଅନ୍ତରସ୍ଥ ଚୈତ୍ୟସଭାଙ୍କ ନିକଟରେ ପହଞ୍ଚି ପାରିବ ଏବଂ ସେଠାରେ ତାର ଖୋଜିବାର ଧାରା ପରିବର୍ତ୍ତନ ହୋଇ ଅନ୍ୟ କିଛି ଖୋଜିବା ଆରମ୍ଭ ହେବ । ବିଜ୍ଞାନ ମଧ୍ୟ ଆଧ୍ୟାତ୍ମିକତା ନିମନ୍ତେ ଏକ ମାର୍ଗ ଏହାହିଁ ପ୍ରମାଣ କରିବା ଶ୍ରୀଅରବିନ୍ଦ ବିଜ୍ଞାନ ପରିଷଦର ମୁଖ୍ୟ ଉଦ୍ଦେଶ୍ୟ ।

ଏହିଭଳି ଏକ ଅତ୍ୟନ୍ତ ଉଚ୍ଚକୋଟୀର ଲକ୍ଷ୍ୟ ରଖି କଟକ ମାତୃଭବନ ଶ୍ରୀଅରବିନ୍ଦ ଉଚ୍ଚଶିକ୍ଷା ଓ ଗବେଷଣା କେନ୍ଦ୍ରର ଛାତ୍ରଛାତ୍ରୀମାନଙ୍କ ମଧ୍ୟରେ ଆରମ୍ଭ ହୋଇଛି ଏକ ଶ୍ରୀଅରବିନ୍ଦ ବିଜ୍ଞାନ ପରିଷଦ । ପ୍ରତ୍ୟେକ ରବିବାର ଦିନ ଏହାର ବୈଠକ ଅନୁଷ୍ଠିତ ହୁଏ । ଏଥିରେ ପାଠକକୁ ସହିତ ଅନ୍ୟାନ୍ୟ ଅନେକ ବିଷୟରେ ମଧ୍ୟ ଆଲୋଚନା ହୁଏ । ଯେଉଁମାନେ ଏଥିରେ ଯୋଗଦାନ କରନ୍ତି ସେମାନେ ଆଗରୁ ନିଜର ନାମ ଦେଇଥାନ୍ତି । ସାପ୍ତାହିକ ପାଠକକୁରେ ସେମାନେ ଅନେକ ବିଷୟରେ ଆଲୋଚନା କରନ୍ତି । ବେଳେବେଳେ ବିଜ୍ଞାନ ସମ୍ବନ୍ଧୀୟ କିଛି କାର୍ଯ୍ୟଶାଳା କିମ୍ବା କୌଣସି ଫ୍ୟାକ୍ଟ୍ ବୁଲିବାକୁ ଯାଆନ୍ତି । ଏହି ଧାରାରେ ସେମାନେ ଥରେ ଗୋଟିଏ ଆଇସ୍କ୍ରିମ୍ ଫ୍ୟାକ୍ଟ୍ ବୁଲିବାକୁ ଯାଇଥିଲେ । ସେଠାରେ ଆଇସ୍କ୍ରିମ୍ ପ୍ରସ୍ତୁତିର ପ୍ରତ୍ୟେକ ସୋପାନକୁ ଅତ୍ୟନ୍ତ ଆଗ୍ରହରେ ପର୍ଯ୍ୟବେକ୍ଷଣ କରିଥିଲେ ।

ଏହିପରି ଭାବରେ ବ୍ରହ୍ମପୁର, ଖଲିକୋଟ, କାଲୁପଡ଼ାଘାଟ, ତାହାରପୁର ପ୍ରଭୃତି ଅନେକ ଗୁଡ଼ିଏ ସ୍କୁଲରେ ଏହି ବିଜ୍ଞାନ ପରିଷଦ ସୃଷ୍ଟି ହୋଇ ପିଲାମାନଙ୍କ ମଧ୍ୟରେ ଏକ ନୂତନ ଆଗ୍ରହ, ଉତ୍ସାହ ଏବଂ ଉନ୍ମାଦନା ସୃଷ୍ଟି କରିଛି ।

ଏହି ବିଜ୍ଞାନ ପରିଷଦର ବର୍ତ୍ତମାନ ସବୁଠାରୁ ଗୁରୁତ୍ୱପୂର୍ଣ୍ଣ କାର୍ଯ୍ୟ ହେଉଛି ରାଜ୍ୟସ୍ତରୀୟ ବିଜ୍ଞାନ ପ୍ରଦର୍ଶନୀ । ସେଥିରେ ବିଭିନ୍ନ ପୂର୍ଣ୍ଣାଙ୍ଗ ଶିକ୍ଷାକେନ୍ଦ୍ରରୁ ଆସୁଥିବା ଛାତ୍ରଛାତ୍ରୀ ତଥା ସେମାନଙ୍କର

ଅପାଠାଳମାନଙ୍କର ସହଯୋଗ ଓ ସମ୍ପୂର୍ଣ୍ଣ ବାସ୍ତବିକ ଅନେକ ଉତ୍ସାହପ୍ରଦ । ଗତ ସେପ୍ଟେମ୍ବର ୬ ଓ ୭ ତାରିଖ ଦୁଇଦିନ କଟକ ମାତୃଭବନରେ ଓଡ଼ିଶାର ବିଭିନ୍ନ ଜିଲ୍ଲାର ୪୦ ଟି ସ୍କୁଲରୁ ୧୪୧ ଜଣ ଛାତ୍ରଛାତ୍ରୀ ଏବଂ ୬୭ ଜଣ ଅପାଠାଳ ୭୨ଟି ପ୍ରୋଜେକ୍ଟ୍ ନେଇ ଆସିଥିଲେ ।

ଅପରାହ୍ନରେ ତିନୋଟି ସ୍କୁଲରୁ ଚାରି ଜଣ ପିଲା ତିନୋଟି *Project*କୁ *Powerpoint Presentation* ଦେଲେ । ମାତୃଭବନର *Evolution*, ବରଗଡ଼ର *Alternative Energy Resources* ଏବଂ ଖଲିକୋଟର *Insect* ସାହାଯ୍ୟରେ ପୋଖରୀ ପରିଷ୍କାର ରଖିବା । ଅତି ଚମତ୍କାର ବିଷୟ ତିନୋଟି ଥିଲା । ପିଲାମାନେ ମଧ୍ୟ ଖୁବ୍ ସୁନ୍ଦର *Presentation* ଦେଲେ । ସେଦିନ ସନ୍ଧ୍ୟାରେ ଥିଲା ପିଲାମାନଙ୍କ ସହିତ ନିରାକାର ଭାଇଙ୍କ ପ୍ରଶ୍ନୋତ୍ତର କାର୍ଯ୍ୟକ୍ରମ । ତାହା ମଧ୍ୟ ଖୁବ୍ ଭଲ ହେଲା ।

ପିଲାମାନେ ତ ଖୁବ୍ ଉପଭୋଗ କରିଥିବେ - ଆମେମାନେ ମଧ୍ୟ ଖୁବ୍ ଉପଭୋଗ କଲୁ । ପ୍ରଶ୍ନ ଏବଂ ଉତ୍ତର ସବୁକିଛି ସତରେ *unique* ଥିଲା । ପରଦିନ ପୂର୍ବାହ୍ନରେ ପ୍ରଦର୍ଶନୀ ଏବଂ ଅପରାହ୍ନରେ ଏକ *feed back* ଆଲୋଚନା । ସେଥିରେ ଅଧିକାଂଶ ସ୍କୁଲର ପିଲାମାନେ ଏବଂ ସେମାନଙ୍କର ଅପାଠାଳ ଭାଗ ନେଲେ । ତାହା ମଧ୍ୟ ଖୁବ୍ *enchanting* ଥିଲା ।

ଏଇ ବାର୍ଷିକ ବିଜ୍ଞାନ ପ୍ରଦର୍ଶନୀରେ ଏକ ଅନୁଭବ ହେଲା - ବିଜ୍ଞାନ ଏବଂ ଆଧ୍ୟାତ୍ମିକତା ମଧ୍ୟରେ ବସ୍ତୁତଃ କୌଣସି ତପାତ୍ ନାହିଁ । ମା'ଙ୍କର ବାଣୀ ମନେ ପଡ଼ିଲା - ବିଜ୍ଞାନ ଏବଂ ଆଧ୍ୟାତ୍ମିକତାର ଲକ୍ଷ୍ୟ ଏକ । କେବଳ ତପାତ୍ ହେଲା - ଆଧ୍ୟାତ୍ମିକତା ଏହା ଜାଣେ ମାତ୍ର ବିଜ୍ଞାନ ତାହା ଜାଣେ ନାହିଁ ।

ସେଦିନ ଲାଗିଲା ଯେପରି -ଆମ ପିଲାମାନେ ବିଜ୍ଞାନର ସୀମାକୁ ଆଧ୍ୟାତ୍ମିକତା ପର୍ଯ୍ୟନ୍ତ ନେଇଯିବା ପାଇଁ ବାସ୍ତବିକ ପ୍ରୟାସ କରୁଛନ୍ତି ।



I do not know if I am making myself clear. There was a time - for a very long period - when I thought that if science were to realise its full potential, but in an absolute way, if that were possible, it would reach true Knowledge. For example, in its study of the composition of Matter, by pushing and pushing its investigations further and further, a time would come when the two would meet. Well, when I had the experience of passing from the eternal Truth-consciousness to the consciousness of the individualised world, it became clear to me that this was impossible. And if you ask me now, I think that both these things, the possibility of a meeting by carrying science to its extreme and the impossibility of any true conscious connection with the material world, are equally incorrect. There is something else. ...

But certainly, objective, scientific knowledge carried to its extreme, if it is possible for it to become absolutely total, leads at least to the threshold. That is what Sri Aurobindo says. Only he says that it is fatal, because all those who have devoted themselves to that knowledge, have believed in it as an absolute truth, and for them this has closed the door to the other approach. In that way it is fatal.

-The Mother (24 May 1962)

Sri Aurobindo Bigyana parishada

Er. Aditya Acharya

The Mother and Sri Aurobindo are performing a vast experiment where all the aspects of life are included. They have shown us the way that any type of work can be a useful mean for manifesting the Divine consciousness which is now trying to manifest in every possible way to transform the earthly life to Life Divine.

The Dasakarmadhara movement was meant for the manifestation of Divine in life transforming it through all sorts of activities without exception. Sri Aurobindo Bigyana Parishada is one of such activities with a vision of glorious possibilities, aspiring to become an instrument of The Mother and Sri Aurobindo.

How this great work, which is completely new, will be done? I have no

idea! But it has already in run and taking a new shape. It is only because of the Grace of The Divine Mother and Her intervention, it is moving in the proper direction. For everything, we rely on Her Blessings and pray to be guided at every step.

For this, the right attitude towards Her work is very essential. The way of doing work or the new ideas will come from this right attitude. In the state level science exhibition we have seen how the new ideas are emerging and are organizing our activities. In some of the centers, Sri Aurobindo Bigyan Parishada activities are finding its own way of manifestation, taking a new shape and this will continue. By the Grace of The Sweet Mother a day will come when Science will achieve its true goal.



"We must not be bewildered by appearances. Sri Aurobindo has not left us. Sri Aurobindo is here, as living and as present as ever and it is left to us to realise his work with all the sincerity, eagerness and concentration necessary.

- The Mother

OBJECTIVES OF SRI AUROBINDO BIGYANA PARISHADA

1. To create awareness among students about recent developments in Science.
2. To make science interesting and useful.
3. To understand how progress of science is useful in the formation of New World on basis of a New Consciousness.
4. To understand what Divine expects from Science & Scientist.

ACTIVITIES OF SRI AUROBINDO BIGYANA PARISHADA

1. Formation of Sri Aurobindo Bigyana Parishada in every Integral School.
2. Monthly study circle for Bigyana Parishada members.
3. Weekly activity on subjects of interest decided by members of Bigyana Parishada.
4. To organise Science Exhibitions.
5. To know, believe and realise that Science and Spirituality have the same goal.
6. To practice "Science of Living" written by The Mother.

□□□

State Level Science Exhibition of Sri Aurobindo Bigyana Parishada A REPORT

Sri Aurobindo Bigyana Parishada (SABP), a unit of Sri Aurobindo Engineering and Technical Group (SAETG), organised its 4th state level science exhibition on 6th and 7th September 2008 at Matrubhaban, Cuttack. Here is a brief report on the exhibition.

SABP was originally formed as a unit of SAETG as the Mother's work through "Dasa Karmadhara" gradually started taking shape in Orissa. It was formed out of a spontaneous aspiration to bring Science and Technology in a new light and objective to the students of Integral Education and work towards nurturing the scientist in the students who has an urge to see and learn science in a way the Mother has wanted us to see.

As the objectives of SABP were slowly refined, activities identified, science exhibitions came up as an effective way to encourage the interest towards science among the students and also to start experiments in the field of science education. Study circles and schools were encouraged to organize such events. Many schools used to do the science exhibition earlier. District and Zonal level exhibitions started and in 2005 the first state level exhibition was organised. From the 1st in 2005 to the 4th in 2008, the state level science exhibition has seen changes in terms of quality as well as quantity of participation.

This year, almost 40 Sri Aurobindo Integral Education Centres from different

parts of Orissa participated in the exhibition. Total number of delegates was 208 including 141 students and 67 guides. Three seminars were presented by students and 72 projects were in display.

The exhibition in 2008 was organized in four segments.

1. Seminars by students.
2. Question and answer on the spiritual aspect of Science.
3. Project displays.
4. Interaction among the participants

Seminars by Students:

We started this practice in the current year and looking at the impact on students and their interest, we feel to continue and expand this going forward. The objective of the session was to encourage students to share their knowledge with the delegates through a presentation. Three different streams for presentation were considered this year.

1. Seminar on a theme of Science as represented by The Mother and Sri Aurobindo – the essence was to encourage students to know what The Mother and Sri Aurobindo have written about Science and its various different aspects. Students from Matrubhaban, Cuttack presented on "Evolution" through an excellent compilation of the words of The Mother and Sri Aurobindo on the topic.
2. Seminar on a theme of Practical utility of science in our day to day lives – the

essence was to encourage schools to come forward and share their experience in handling a problem in their schools through a practical implementation of scientific concepts. Students from Khallikote presented a very valuable and important project that they had carried out in their school to clean a pond through natural and cost effective way. The presentation was well received and appreciated by the delegates

3. Seminar on some of the modern developments in Science – the objective of the session was to share the recent happenings and developments in science with the young students to tickle their grey cells so that they feel encouraged and challenged to know more about the scientific practices around the world. Students from Bargarh delivered a very valuable presentation on the energy crisis and recent developments in the field of alternative energy sources.

The seminars were conducted in the afternoon of 6th September 2008 with every participant speaking for about 20 minutes.

Another interesting aspect of the seminars was that the entire session was chaired and managed by students only.

Question and answer on Science & Spirituality:

The second session was conducted in the evening of 6th September 2008 with an elaborate discussion on questions raised by students with respect to science and spirituality. Prior to the exhibition, questions related to this were collected from members of Sri Aurobindo Bigyana Parishada at Matrubhaban and other students. Sri Ch. Nirakar responded to these questions in this session, through his

collection of explanations from the Mother and Sri Aurobindo. It was truly an enlightening session as students and teachers were exposed to the truth of getting answer to every question one may have, including that on science, from the works of the Mother and Sri Aurobindo.

Exhibition of projects:

Exhibition was inaugurated at 10AM on 7th September 2008. This time we had about 72 projects in display from different schools. Since most of the participants had confirmed their project to be displayed in advance, we had organized the displays by scientific themes e.g. environmental, physical, chemical, biological, spiritual etc. Special arrangements were made for projects that require electricity, sunlight and dark room. Many students from Matrubhaban, near by Integral Education Centers, as well as members of study circles visited the projects with lot of interest and encouraged the student delegates. The exhibition was closed at 1:30 PM

Interaction between delegates:

We had the concluding session post lunch. It was an open forum for all the delegates to share their experiences both as a part of the exhibition and also as a member of Sri Aurobindo Bigyana Parishada in their schools. While the exhibition was on, we had requested the participating schools to share their feedback through a feedback form, about the organization, structure & constituent of the event, recommendations for future events and activities of Sri Aurobindo Bigyana Parishada. It was heartening to see every school had responded to this request. We had collcted the feedback from the schools

prior to the interaction session and shared it with the entire group of delegates. Many of the schools came forward to share their understanding of objectives of Sri Aurobindo Bigyana Parishada, approach and activities of Sri Aurobindo Bigyana Parishada in their schools and future plans. Each delegate participated actively in this session and contributed to make this event even better and meaningful in the future.

The session concluded around 4:30PM on 7th September with all participating delegates receiving a special blessings from the Mother's room. A special certificate expressing gratitude from the organizing team was also distributed to the student delegates.

Some of the key feedbacks:

1. There should be a mechanism to share knowledge among delegates through a reference publication either as a monthly science magazine, or a booklet of the projects displayed.
2. While some of the delegates suggested that the project themes should be more innovative, others suggested it to be more related to syllabus.
3. Some others suggested the entire exhibition to be organized on a single theme.
4. With respect to activities of Sri Aurobindo Bigyana Parishada, there were a few suggestions.
 - a. Every school should have SABP.
 - b. Having an orientation programmes for SABPs.
 - c. Talks/seminars by eminent scientists should be organised.
5. There were some operational

suggestions to make the exhibition more effective and useful.

- a. To conduct the exhibition in winter.
- b. Having the exhibition conducted over 3 days instead of 2 days.
- c. To organise the exhibition in a more disciplined way.
- d. To have a discussion among the participating schools before the start of the exhibition.
- e. To organise the exhibition in different places of Orissa.

THE ROAD AHEAD

Based on the interaction among the delegates, suggestions from experts in the field and above all the essential objective of Sri Aurobindo Bigyana Parishada, here are some of the key activities to be taken up in the future course of time.

Practical implementation of projects : One of the essential objectives of SABP is to encourage its members to identify the needs at the schools and centres and come up with practical projects with help from science and technology to address them. These projects when implemented at a place can become example for other centres and schools to take them up depending on their needs. One of the closest examples in this are is the project executed at Sri Aurobindo Integral Education Centre at Khallikote.

Seminars by students : It was introduced for the first time this year and very well appreciated and received by delegates – both students and teachers. Going forward we intend to orient the state level exhibition focusing more on presentation of actual project reports and words of The Mother and Sri Aurobindo on relevant

themes as well as key scientific invention/ discoveries.

Strengthen school, district and zonal level exhibitions: While seminars and presentation of actual work done by students are important, so are the experimental models and display of scientific experiments by the students to generate interest in young minds. We feel there is a greater need to establish a culture of such scientific displays and seminar at the school, districts and zonal level. This will also help us refine the participations in the state level exhibition.

Early confirmations of participation: One of the key objectives of State Level Exhibition among the students of Sri Aurobindo Integral Education Centers is to encourage the genuine urge to share something new one has learnt in the field of science and technology. Most of the time, we come up with commonly available project ideas. While it is good to come and share the knowledge behind these theories or concepts, it will be great if such ideas/ concepts / theories being displayed are

unique in nature. In order to achieve this, we had requested for an early confirmation of participation from schools so that we can ensure uniqueness of the participating themes. While many of the schools followed the principle, some could not. During the interaction session also we felt a strong urge to publish the proceedings of the exhibition by providing details of the experiments being displayed so that students and teachers can use it as a reference for future use. We appreciate if we take it as a discipline to confirm early about the participation with the details of the projects.

Active collaboration among SABPs in different schools: While we gradually work towards refining the objectives and activities of SABP, it is necessary that the SABP in different schools actually collaborate with their ideas to make it a better and effective instrument to serve The Mother. During the interaction session among the participants many stressed up on the need for such a collaboration and we aspire soon this will be a reality.



With best compliments from:

Science India

Bharatia Tower, Badambadi, Cuttack

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DIST-ANUGUL
M: 94370 71262

AJAY KUMAR MALLICK
AT/PO- KOMNA
DIST- NUAPADA
PIN- 766106
M: 9437734339

SRI PANKAJ KUMAR DASH
AT- SITAL COLONY
BOMBAY CHHAK
PO - INDUSTRIAL ESTATE
DIST- JHARASUGUDA -768203
M: 9338545116

AMBIKA PR. MOHANTY
QN - C-239 NALCO NAGAR
SRI AUROBINDO PATHACHAKRA
NALCO
DIST-ANUGUL
M: 94370 74800

BIBHUTI BHUSAN PATRA
AT- NEAR R.E.O COLONY
PO- BHAWANIPATANA
DIST - KALAHANDI
PH NO - 06670 - 230951
M: 9437151279

ER. BIRAJA SANKAR DAS
A/67 , SECTOR-17
ROURKELA
DIST- SUNDARGADA
94370 82719

HARINARAYAN PANIGRAHI
AT - SASAN SAHI
PO/ DIST - DEOGARH
PIN - 768108
PH: 06641 - 226329
M: 9437126675

SANTOSH KUMAR GAHAN
U.G.M.E. SCHOOL LINE
BALIMELA
DIST - MALKANGIRI
PH: 9437471198

MAHESWAR MAHANTA
AT/PO- BETONATI
DIST- MAYURBHANJ

ER. HEMANT KUMAR DAS
AT/PO- PARADEEP
DIST - JAGATSINGHPUR
PH: 06722 - 222569
M: 9437183569

DUKHISHYAM PRADHAN
AT- SRI AUROBINDO
INTEGRAL EDUCATION CENTRE
MATRUVIHAR
PO- HALVA
DIST- RAYAGADA -765002
M: 94375 40326

ER. MADAN MOHAN DASH
SRI AUROBINDO INTEGRAL
SCHOOL
AT - MATRUPALLI
PO /VIA -CHARAMPA
DIST - BHADRAK
PIN - 756101
PH: 06784 - 231787

SHANTILATA PRADHAN
AT/PO- PARADEEP
DIST - JAGATSINGHPUR
M: 9937435715

SUDHANSU SEKHAR NAYAK
SRI AUROBINDO PATHACHAKRA
NALCO
DIST-ANUGUL
M: 94375 52060

BAIKUNTHANATH JENA
AT- PLOT NO: 451/180
PO- NAYAPALLI
BHUBANESWAR
DIST- KHURDHA

CHATURBHUJA PATRA
PRINCIPAL
SRI AUROBINDO INTEGRAL
EDUCATION CENTRE
AT/PO- ITAMATI
DIST- NAYAGAD
M: 9938005687

TARINI CH. PATI
QR. NO. D4, SECTOR - 3
AT/PO - DAMONJODI
DIST - KORAPUT
PIN - 763008
PH: 06853 - 255091
M: 9437095509

RAGHUNATH PANDA
AT- TRAILOKYA BHABAN
PO- LANDI SAHI ,
BHANJANAGAR
DIST- GANJAM
PIN - 761126
PH: 06821 - 241489, 241067
M: 94384 06835

PREMANANDA SAMAL
ASST. ENGINEER
PA SE OFFICE (IRRIGATION)
NEAR B.ED COLLEGE
SAMBALPUR
PH: 94370 93358

KSHAMASILA PATEL
AT/PO- KUCHINDA
RAJADHANI PADA
WARD NO-6
DIST-SAMBALPUR -768222
PH: 9437104678

SANTOSH SAHU
JAIL ROAD
PIN - 758001
PO/ DIST - KEONJHAR
M: 9437715677

FAKIR MOHAN PRADHAN
AT/PO - BARGARH
NEAR PRIVATE BUS STAND
BARAGAD
PIN - 768028
PH: 06646-231901

DOLOGOBINDA MAHARANA
AT - BALADEVJEW COLONY
PO /DIST - KEONJHAR
PIN - 758001
M: 9437200666

DEBA PRAKSH JENA
AT/PO- NAMPO
VIA- JALESWAR
DIST- BALESORE

RAMESH CH. ROUT
SRI AUROBINDO YOGA
NIKETAN
AT/PO - PANIKOILI
DIST - JAJPUR
PIN- 755043
PH: 06726 - 240243
MO - 94371- 47060

NARAYAN PARIDA
AT- PLOT NO. 206
PO- JAYADEV BIHAR
BBSR -13
DIST- KHURDHA
PH: 0674-2360258

9437309470
ABHIMANYU BEHERA (J. E.)
AT- R.K.CLOLONY
PO/DIST - NABARANGPUR
PH: 06866 - 275854 (R)
M: 9437406280

SIKANDAR PATRO
AT- MATRUKRUPA
BARINIPUT
PO- JEYPORE
DIST - KORAPUT
PH: 06854 - 242064
M: 9437095060

SUBASH CH ROUT
CHHADESH BIDYA MANDIR
AT- CHHADESH
PO- OLAVER
DIST- KENDRAPADA

MANMATH KUMAR ROUT
AT-ISWARPUR
PO/DIST- KENDRAPADA

JAYADEV HOTA
AT/PO- KHARIAR
DIST- NUAPADA

SRI SUDARSHANA DIXIT
AT- DHIPA SAHI
PO- PHULBANI -762001
M: 9437180140

LAXMIKANTA PRADHAN
AT /PO - KALAPATHAR
VIA - BIRMAHARAJPUR
DIST - NUAPADA
PIN - 767018
M: 9437977263



11th ALL ORISSA CONFERENCE OF Sri Aurobindo Engineering & Technical Group

PROGRAMME

12. 10. 2008 (Sunday)

09:00 AM – 09:45 AM

Savitri Recitation

Invocation

Welcome address

Report Presentation

SAETG concept & action

Lighting of Lamp and

Inaugural Address

Release of Souvenir &

Inaugural Address

Presidential address

Gratitude

Inaugural Session

Dr Shyama Kanungo

Er. Santosh Panigrahi

Er. B. K. Sinha

Sri Prasad Tripathy

Shri Kishore Kumar Mohanty, OAS

Collector & District Magistrate, Cuttack

Er. M.R. Patel,

Executive Director, IFFCO, Paradeep

Er. Ananda Subudhi (EIC, Retd)

Sri Dharanidhar Pal

10:00 AM – 12:30 PM

Chairpersons

Subject Introduction

& Moderator

Technical Session:

Panel Discussion on

"Aspects of Architecture"

Er. M.R. Patel, ED, IFFCO

Er. R. Pandey, DED, OCL, Tangi

Er. A.Subudhi, EIC, Retd.,

Er. P. Samal

Ar. Maitreyee Mishra

Panelists

Ar. Bhabani Mishra

Ar. Geet Inder Bath

Sri Prem Rout

Sri P. V. Ramanna

Topics

Architecture for Common Man

Interior Design – A need for everyone

Kitchen Concepts

Surface Treatment and Painting

Sri Satyabrata Sahoo Landscaping in Architecture
Er. Gopinath Sahoo Common Issues in Construction
Summing Up Question & Answer
Er Ambika Prasad Mohanty

02:00 PM – 03:30 PM

Co-ordinators

Framing of Action Plan

Er. Manoranjan Naik,
Er. Santosh Panigrahi, Er N. Pani,
Er A. Kanungo, Er. B. Biswal,
Er P. Samal, Er. P. K. Senapaty,
Er. Fakir Charan Pradhan,
Er. Raghunath Panda,
Er Satyajit Mishra, Samarendra

04:30 PM – 06:00 PM

Topic

Concluding Session**"... And beauty conquer the
resisting world"**

Introduction

Sri Prasad Tripathy

Speaker

Sri Ch. Nirakar

Conclusion

Sri Gadadhar Mishra

Vote of Thanks

Er. Ramesh Behera

06:00 PM – 06:30 PM**Cultural Programme**

Instrumental Music

by Er. P. K. Ray and Troup

09:45AM to 10:00AM – Tea Break; 12:30PM to 01:30PM – Lunch;
03:30PM to 04:30PM – Tea and Snacks



*The mind, the life and the body must become and live
what the Soul knows and is.*

–The Mother

Sri Aurobindo Bigyana Parishada

A unit of Sri Aurobindo Engineering and Technical Group

MATRUBHABAN, CUTTACK

Phone: 0671-2344338 , E-mail: matrubhaban@bsnlin , visit us: www.matrubhaban.com

Name and address of school:.....

Ph. No:

Organisation Structure

Guide:(SAETG Member)
Ph No:
E-mail

Facilitator (Apa/Bhai):
Ph No:
E-mail

Sr. Scientist (Student):
Class:
(Phone:.....)

Helper to Sr Scientist (Student):

Junior Scientists:

Class 9th: Master..... / Miss.....
Class 8th: Master..... / Miss.....
Class 7th: Master..... / Miss.....
Class 6th: Master..... / Miss.....
Class 5th: Master..... / Miss.....
Class 4th: Master..... / Miss.....
Class 3rd: Master..... / Miss.....
Class 2nd: Master..... / Miss.....
Class 1st: Master..... / Miss.....

Signature of

PRINCIPAL/ Facilitator

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"...if inwardly, there is an **absolute sincerity** which enables the scientist to see, to sense, to perceive the point at which it eludes him, then that can lead him to the other state of consciousness, but not **by his own procedures.**"

- Sri Aurobindo

*For your heart to remain
happy keep it always filled
with gratefulness.
Gratefulness is the surest
way to the Divine.*

*with the love and compassion
that pour constantly from
the Divine Grace.*



With Best Compliments from

Pawan Kandoi

ତାଷାଭାଗମାନଙ୍କୁ 'ଇଫ୍‌କୋ'ର ଆନ୍ତରିକ ଅଭିନନ୍ଦନ
 ପ୍ରତ୍ୟେକ ତାଷାଭାଗର ପ୍ରଥମ ଆବଶ୍ୟକତା



ସବୁଜ କ୍ଷେତରେ
 ହସ ଭରିଦିଏ



ଇଫ୍‌କୋ ସାର ସୁଷମ ସାର
 ଅଧିକ ଅମଳ ଲାଭ ପ୍ରଚୁର

IFFCO ରଞ୍ଚିଆନ୍ ଫାରମରସ୍ ଫର୍ଟିଲାଇଜର୍ କୋଅପରେଟିଭ୍ ଲିଡିଃ
 ପାରାଡାପ ମୁନିସ୍ (ଓଡ଼ିଶା)

ତାଷାର ନିଜସ୍ବ ସମବାୟ ସଂସ୍ଥା - **ଇଫ୍‌କୋ**
 ଅଧିକ ଅମଳ ପାଇଁ ଇଫ୍‌କୋ ଏନ୍.ପି.କେ. ୧୦ : ୨୬ : ୨୬,
 ଡି.ଏ.ପି. ୧୮ : ୪୬ ଏବଂ ମୁରିଆ ସାର ସର୍ବୋତ୍କୃଷ୍ଟ ଅଟେ ।

**PHOTOGRAPHS FROM STATE LEVEL SCIENCE EXHIBITION
OF SRI AUROBINDO BIGYANA PARISHADA
6TH & 7TH SEPTEMBER 2008
MATRUBHABAN, CUTTACK**



**PHOTOGRAPHS FROM STATE LEVEL SCIENCE EXHIBITION
OF SRI AUROBINDO BIGYANA PARISHADA**

**6th & 7th SEPTEMBER 2008
MATRUBHABAN, CUTTACK**



**PHOTOGRAPHS FROM MONTHLY SRI AUROBINDO PATHACHAKRA AT
RESIDENCE OF SAETG MEMBERS**

