


No. SVEC/CE/ASCE SVEC Student Chapter/Circulars/2020-21/07

25 March 2021

CIRCULAR

The Department of Civil Engineering is organizing a **Poster Presentation Competition** on **“Civil Engineering Infrastructure for the Development of Smart Cities”** under **ASCE SVEC Student Chapter** on **19-04-2021** i.e., **2.45 to 4.45 P.M.** All the students of I B.Tech. I Semester, II, III & IV B.Tech. II Semester Civil Engineering (A & B Sections) are encouraged to participate in the competition. **The Registration in NIVA is mandatory. Prizes and participation certificates** will be provided for **Student Members of ASCE SVEC Student Chapter.**

For further details, contact **Mr. D. V. Purushotham**, Coordinator - ASCE SVEC Student Chapter and Assistant Professor, Department of Civil Engineering, SVEC or **Office Bearers** of ASCE SVEC Student Chapter or Email id: asce@vidyanikethan.edu



(Dr. O. Eswara Reddy)
Faculty Advisor
ASCE SVEC Student Chapter
Professor, HoD and Chairman-BOS

Copy to: Head, Dept. of Civil Engg.
Notice Board
Niva File
Circulation to students
ASCE SVEC Student Chapter File

for circulation


25/03/2021

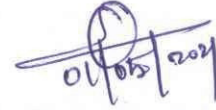
HO/CE

No. SVEC/CE/ASCE SVEC Student Chapter/Circulars/2020-21/08

01 May 2021

CIRCULAR

Online Poster Presentation Competition on “Civil Engineering Infrastructure for the Development of Smart Cities” under ASCE SVEC Student Chapter scheduled on 19-04-2021 is postponed to **30-05-2021**. All the students of I, II, III & IV B.Tech. II Semester Civil Engineering (A & B Sections) are encouraged to participate in the competition. Prizes and participation certificates will be provided for register students. For further details, contact **Mr. D. V. Purushotham**, Coordinator - ASCE SVEC Student Chapter or Office Bearers of ASCE SVEC Student Chapter or Email id: asce@vidyanikethan.edu.



(Dr. O. Eswara Reddy)

Faculty Advisor

ASCE SVEC Student Chapter

Professor, HoD and Chairman-BOS

Copy to: Head, Dept. of Civil Engg.
Notice Board
Niva File
Circulation to students
ASCE SVEC Student Chapter File

Online Poster Presentation on
"Civil Engineering Infrastructure for the Development of Smart Cities"



May 30, 2021 (Sunday)

Organized by
ASCE SVEC Student Chapter
 Department of Civil Engineering



Last Date of Registration: 29-05-2021

Registration Link:

<https://forms.gle/Fs2u6KNWdBt914jPA>

Eligibility:

- All the students of B.Tech Civil Engineering from SVEC are eligible to participate in the event.

E-Certificates will be provided for all participants and Prize Winners

Contact us:

ASCE SVEC Office Bearers - 2021
asce@vidyanikethan.edu

Event Platform:



Rules to follow:

- The poster entry must have an impact on the topic.
- Each participant should submit one entry only.
- File Format: Save your file as a PDF for quick and easy upload.
- All Poster should be original work of participant and follow the given format.
- The following headings are suggested to structure your abstract, but you can amend as necessary – Introduction/Background, Methods, Findings, Conclusions.
- During the event, the maximum two participants in each team are given 7 minutes to present their poster and 3 minutes for queries.

Chief Patrons



Dr. M. Mohan Babu
Chairman, SVET



Sri. Vishnu Manchu
CEO, SVET

Patron



Dr. B. M. Satish
Principal, SVEC

Convener



Dr. O. Eswara Reddy
Faculty Advisor, ASCE SVEC Student Chapter
HoD and Chairman-BoS, Dept. of Civil Engg.

Coordinator



Mr. D. V. Purushotham
Coordinator
ASCE SVEC Student Chapter

Online Poster Presentation

on

"Civil Engineering Infrastructure for the Development of Smart Cities"



May 30, 2021
(Sunday)



Organized by

ASCE SVEC Student Chapter
Department of Civil Engineering

Chief Patrons



Dr. M. Mohan Babu
Chairman, SVET



Sri. Vishnu Manchu
CEO, SVET

Patron



Dr. B. M. Satish
Principal, SVEC

Convener



Dr. O. Eswara Reddy
Faculty Advisor, ASCE SVEC Student Chapter
HoD and Chairman-BoS, Dept. of Civil Engg.

Coordinator



Mr. D. V. Purushotham
Coordinator
ASCE SVEC Student Chapter

Online Poster Presentation on
“Civil Engineering Infrastructure for the Development of Smart Cities”
 30-05-2021 i.e., 2.00 to 5.00 P.M.

Participation List

| S.No | Name of the Student | Roll No | Class & Section |
|------|----------------------------------|------------|-----------------|
| 1. | Mr. SHAIK ARKAT MAHAMUDA | 20121A0191 | I CE B |
| 2. | Ms. SHAIK MAHABOOB GOUSE ANISHA | 20121A0191 | I CE B |
| 3. | Ms. C JYOSHNA | 19121A0116 | II CE A |
| 4. | Ms. O MONISHA | 19121A0178 | II CE A |
| 5. | Ms. GINKALA HARSHITHA | 19121A0129 | II CE A |
| 6. | Ms. KOLA LIKHITHA SREE | 19121A0142 | II CE A |
| 7. | Ms. DASARI TEJASWINI | 20125A0103 | II CE B |
| 8. | Mr. ARAGONDA YUGANDHAR | 20125A0115 | II CE B |
| 9. | Mr. KANCHARLA REDDAIAH | 20125A0122 | II CE B |
| 10. | Mr. GURRAM RANGANATHA TEJA | 20125A0105 | II CE B |
| 11. | Mr. KALLURI PRANEETH KUMAR REDDY | 20125A0121 | II CE B |
| 12. | Mr. ACHAKATLA MOHAMMED ZAHID | 18121A0101 | III CE A |
| 13. | Ms. CHIRUTANI THEJASWI | 18121A0123 | III CE A |
| 14. | Ms. ANUPALA NAVYA | 18121A0105 | III CE A |
| 15. | Ms. PALLAVI NALLATURU | 18121A0169 | III CE A |
| 16. | Ms. PATHIKONDA PRATHYUSHA | 18121A0170 | III CE A |

30/05/2021
Faculty Advisor
ASCE SVEC Student Chapter

No. SVEC/CE/ASCE SVEC Student Chapter/Circulars/2020-21/10

21 June 2021

CIRCULAR

The Department of Civil Engineering "**Congratulates**" the following students on winning the online **Poster Presentation** on "**Civil Engineering Infrastructure for the Development of Smart Cities**" under **ASCE SVEC Student Chapter** on **30-05-2021**.

| S.No. | Roll No. | Name of the Student | Class & Section | Prize |
|-------|------------|--------------------------------|---------------------------------|---------------------|
| 1 | 18121A0169 | Ms. PALLAVI NALLATURU | III B.Tech. II-Sem A-section | First Prize |
| 2 | 18121A0105 | Ms. ANUPALA NAVYA | III B.Tech. II-Sem A-section | Second Prize |
| 3 | 20125A0103 | Ms. DASARI TEJASWINI | II B.Tech. II-Sem B-section | Second Prize |
| 4 | 20121A0191 | Ms. SHAIK ARKAT MAHAMUDA | I B.Tech. II-Sem B-section | Third Prize |
| 5 | 20121A0192 | Ms. SHAIK MAHABOOB GOUSE NISHA | I B.Tech. II-Sem B-section | |



(Dr. O. Eswara Reddy)

Faculty Advisor

ASCE SVEC Student Chapter

Professor, HoD and Chairman-BOS

Copy to: Head, Dept. of Civil Engg.
Notice Board
Circulation to students
ASCE SVEC Student Chapter File

Department: **CIVIL ENGINEERING** | Date: **30th May 2021**

Online Poster Presentation on
"Civil Engineering Infrastructure for the Development of Smart Cities"
30th May 2021

The Department of Civil Engineering of Sree Vidyanikethan Engineering College has organized a Online Poster Presentation on **"Civil Engineering Infrastructure for the Development of Smart Cities"** under ASCE SVEC Student Chapter on 30th May 2021. The objective of the program is to motive and nurture the Poster Presentation skills and impart knowledge on Civil Engineering Infrastructure for the Development of Smart Cities.

A total of 16 students (04 individuals and 6 teams of each 2) from II, III and IV B.Tech. Civil Engineering I Semester has participated in the event. The whole event was conducted with great zeal and enthusiasm. The competition was conducted through **Zoom Platform** from 02:00 pm to 4:30 pm on 30th May 2021.

Dr. O. Eswara Reddy, Professor, Head, BOS Chairman, and Faculty Advisor - ASCE SVEC Student Chapter, Department of Civil Engineering, SVEC and Convener of the event addressed the gathering and motivated the participants; Mr. D. V. Purushotham, Assistant Professor, Coordinator-ASCE SVEC Student Chapter and Coordinator of the event are judged the participants on different criteria such as knowledge, presentation, demonstration, creativity and content. Office barriers of ASCE SVEC Student Chapter were the organizers of this program.

On the whole, the event has proved successful. The prize winners were judged purely based on subject knowledge and presentation skills. The **First Prize** to **Ms. Pallavi Nallaturu** of III B. Tech. CE-A; **Second Prize** to **Ms. Anupala Navya** of III B. Tech. CE-A and **Ms. Dasari Tejaswini** of II B. Tech. CE-B and **Third Prize** to **Ms. Shaik Arkat Mahamuda** and **Ms. Shaik Mahaboob Gouse Anisha** were awarded in poster presentation on "Civil Engineering Infrastructure for the Development of Smart Cities". Participation certificates were distributed to all the participants.

The students were enriched with knowledge on latest technologies used in the poster presentation. Further, it is believed that this event has ignited the young minds to learn and participate and to participate and learn.

The photographs of the event are as follows.



SREE VIDYANIKETHAN ENGINEERING COLLEGE
(AUTONOMOUS)

Sree Sainath Nagar, Tirupati – 517102
(Affiliated to JNTUA Anantapuramu, Approved by AICTE, Accredited by NBA; NAAC with 'A' Grade)



Online Poster Presentation on

"Civil Engineering Infrastructure for the Development of Smart Cities"

May 30, 2021 (Sunday)

Organized by
ASCE SVEC Student Chapter
Department of Civil Engineering



ASCE SVEC Student Chapter
Department of Civil Engineering



Last Date of Registration: 29-05-2021

Registration Link:
<https://forms.gle/Fs2u6KNWdBt914jPA>

Eligibility:

- All the students of B.Tech Civil Engineering from SVEC are eligible to participate in the event.

E-Certificates will be provided for all participants and Prize Winners

Contact us:
ASCE SVEC Office Bearers - 2021
asce@vidyanikethan.edu

Rules to follow:

- The poster entry must have an impact on the topic.
- Each participant should submit one entry only.
- File Format: Save your file as a PDF for quick and easy upload.
- All Poster should be original work of participant and follow the given format.
- The following headings are suggested to structure your abstract, but you can amend as necessary – Introduction/Background, Methods, Findings, Conclusions.
- During the event, the maximum two participants in each team are given 7 minutes to present their poster and 3 minutes for queries.

Chief Patrons



Dr. M. Mohan Babu
Chairman, SVET

Patron



Sri. Vishnu Manchu
CEO, SVET

Convener



Dr. B. M. Satish
Principal, SVEC

Coordinator



Mr. D. V. Purushotham
Coordinator
ASCE SVEC Student Chapter

Event Brochure



SREE VIDYANIKETHAN ENGINEERING COLLEGE
(AUTONOMOUS)

Sree Sainath Nagar, Tirupati – 517102
(Affiliated to JNTUA Anantapuramu, Approved by AICTE, Accredited by NBA; NAAC with 'A' Grade)



Online Poster Presentation

ON

"Civil Engineering Infrastructure for the Development of Smart Cities"

May 30, 2021 (Sunday)

Organized by
ASCE SVEC Student Chapter
Department of Civil Engineering



ASCE SVEC Student Chapter
Department of Civil Engineering



Chief Patrons



Dr. M. Mohan Babu
Chairman, SVET

Patron



Sri. Vishnu Manchu
CEO, SVET

Convener



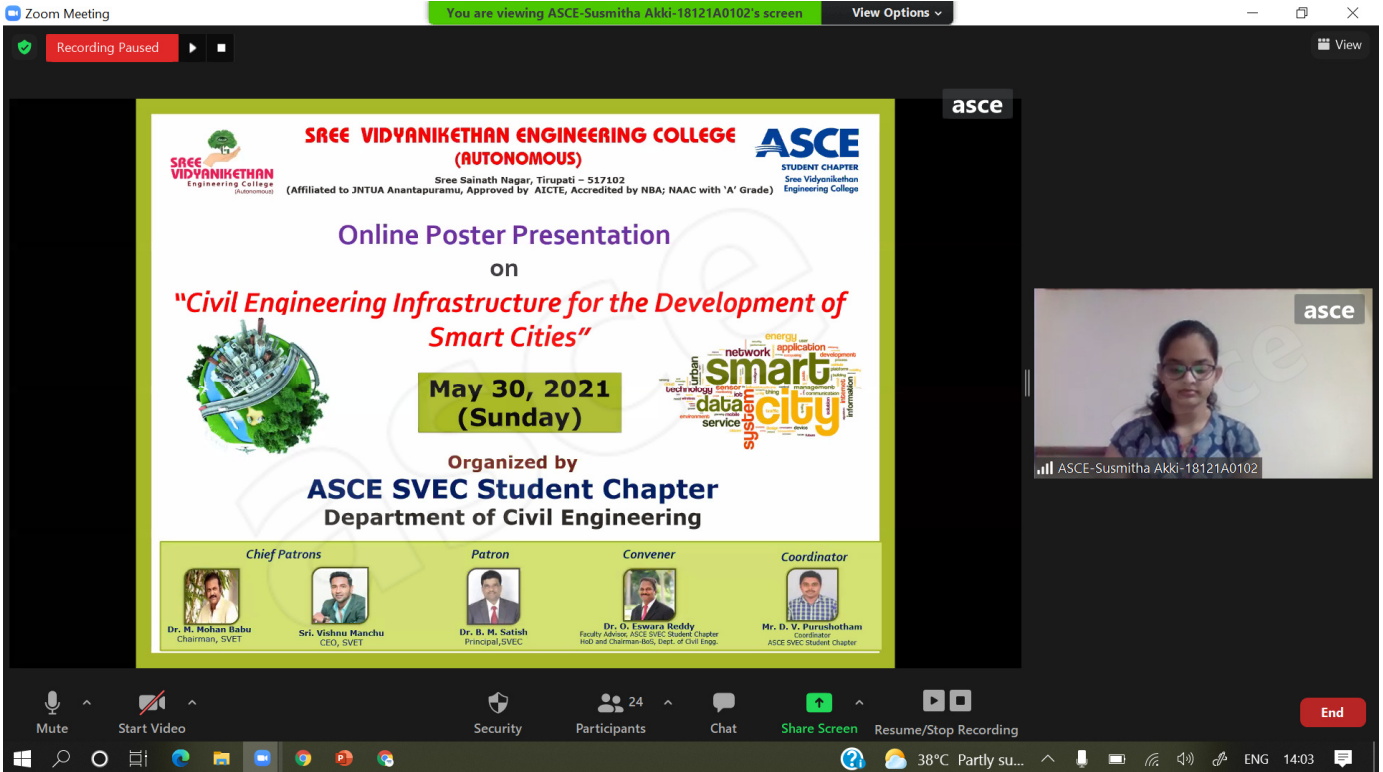
Dr. B. M. Satish
Principal, SVEC

Coordinator



Mr. D. V. Purushotham
Coordinator
ASCE SVEC Student Chapter

Event Banner



Zoom Meeting | You are viewing ASCE-Susmitha Akki-18121A0102's screen | View Options






Recording Paused

SREE VIDYANIKETHAN ENGINEERING COLLEGE (AUTONOMOUS)
Sree Sainath Nagar, Tirupati – 517102
(Affiliated to JNTUA Anantapuram, Approved by AICTE, Accredited by NBA; NAAC with 'A' Grade)

ASCE STUDENT CHAPTER
Sree Vidyanikethan Engineering College

Online Poster Presentation
on
"Civil Engineering Infrastructure for the Development of Smart Cities"
May 30, 2021 (Sunday)

Organized by
ASCE SVEC Student Chapter
Department of Civil Engineering

| Chief Patrons | Patron | Convener | Coordinator |
|--|--|--|---|
|  Dr. N. Mohan Babu Chairman, SVET |  Sri. Vishnu Manchu CEO, SVET |  Dr. B. M. Satish Principal, SVEC |  Dr. O. Eswara Reddy Faculty Advisor, ASCE SVEC Student Chapter Host and Chairman-Bos, Dept. of Civil Engg. |
|  Mr. D. V. Paruchotham Coordinator ASCE SVEC Student Chapter | | | |

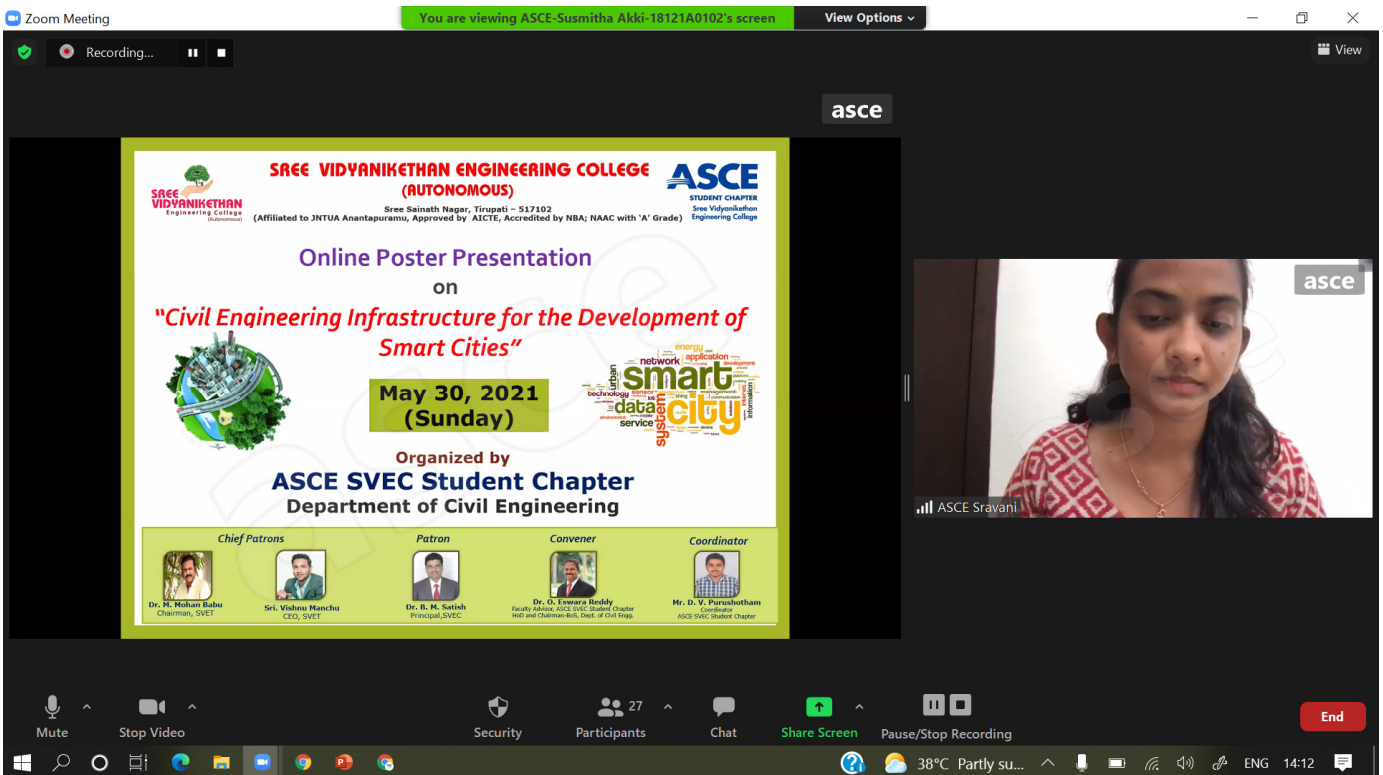
asce

ASCE-Susmitha Akki-18121A0102

Mute Start Video Security Participants 24 Chat Share Screen Resume/Stop Recording End

38°C Partly su... ENG 14:03

Ms. A. Susmitha, President of ASCE SVEC Student Chapter welcoming the Participants of Poster Presentation Competition



Zoom Meeting | You are viewing ASCE-Susmitha Akki-18121A0102's screen | View Options






Recording...

SREE VIDYANIKETHAN ENGINEERING COLLEGE (AUTONOMOUS)
Sree Sainath Nagar, Tirupati – 517102
(Affiliated to JNTUA Anantapuram, Approved by AICTE, Accredited by NBA; NAAC with 'A' Grade)

ASCE STUDENT CHAPTER
Sree Vidyanikethan Engineering College

Online Poster Presentation
on
"Civil Engineering Infrastructure for the Development of Smart Cities"
May 30, 2021 (Sunday)

Organized by
ASCE SVEC Student Chapter
Department of Civil Engineering

| Chief Patrons | Patron | Convener | Coordinator |
|--|--|--|---|
|  Dr. N. Mohan Babu Chairman, SVET |  Sri. Vishnu Manchu CEO, SVET |  Dr. B. M. Satish Principal, SVEC |  Dr. O. Eswara Reddy Faculty Advisor, ASCE SVEC Student Chapter Host and Chairman-Bos, Dept. of Civil Engg. |
|  Mr. D. V. Paruchotham Coordinator ASCE SVEC Student Chapter | | | |

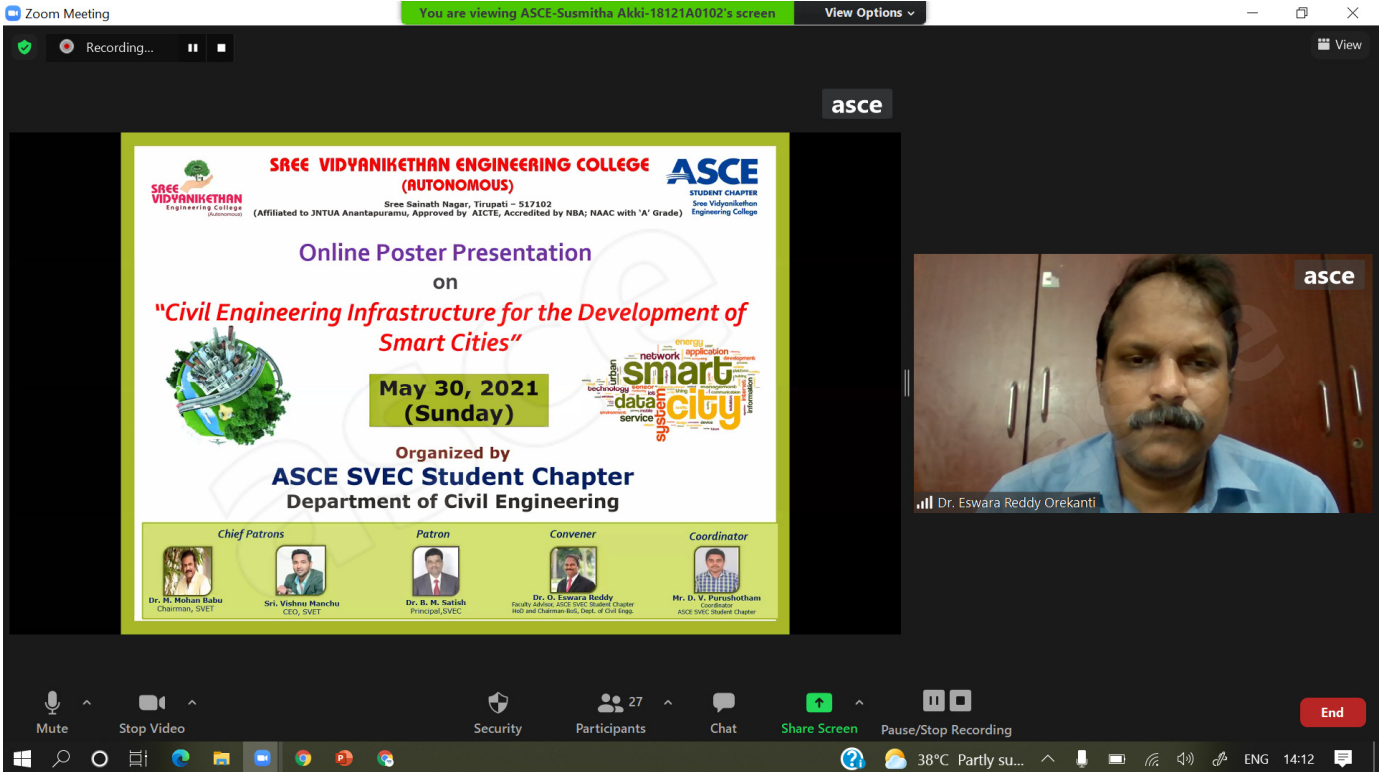
asce

ASCE Sravani

Mute Stop Video Security Participants 27 Chat Share Screen Pause/Stop Recording End

38°C Partly su... ENG 14:12

Ms. E. Sravani, Corresponding Secretary, ASCE SVEC Student Chapter welcoming the Dr. O. Eswara Reddy, Faculty Advisor of ASCE SVEC Student Chapter



Zoom Meeting | You are viewing ASCE - Susmitha Akki-18121A0102's screen | View Options

SREE VIDYANIKETHAN ENGINEERING COLLEGE (AUTONOMOUS)
Sree Sainath Nagar, Tirupati – 517102
(Affiliated to JNTUA Anantapuramu, Approved by AICTE, Accredited by NBA; NAAC with 'A' Grade)

ASCE
STUDENT CHAPTER
Sree Vidyanikethan
Engineering College

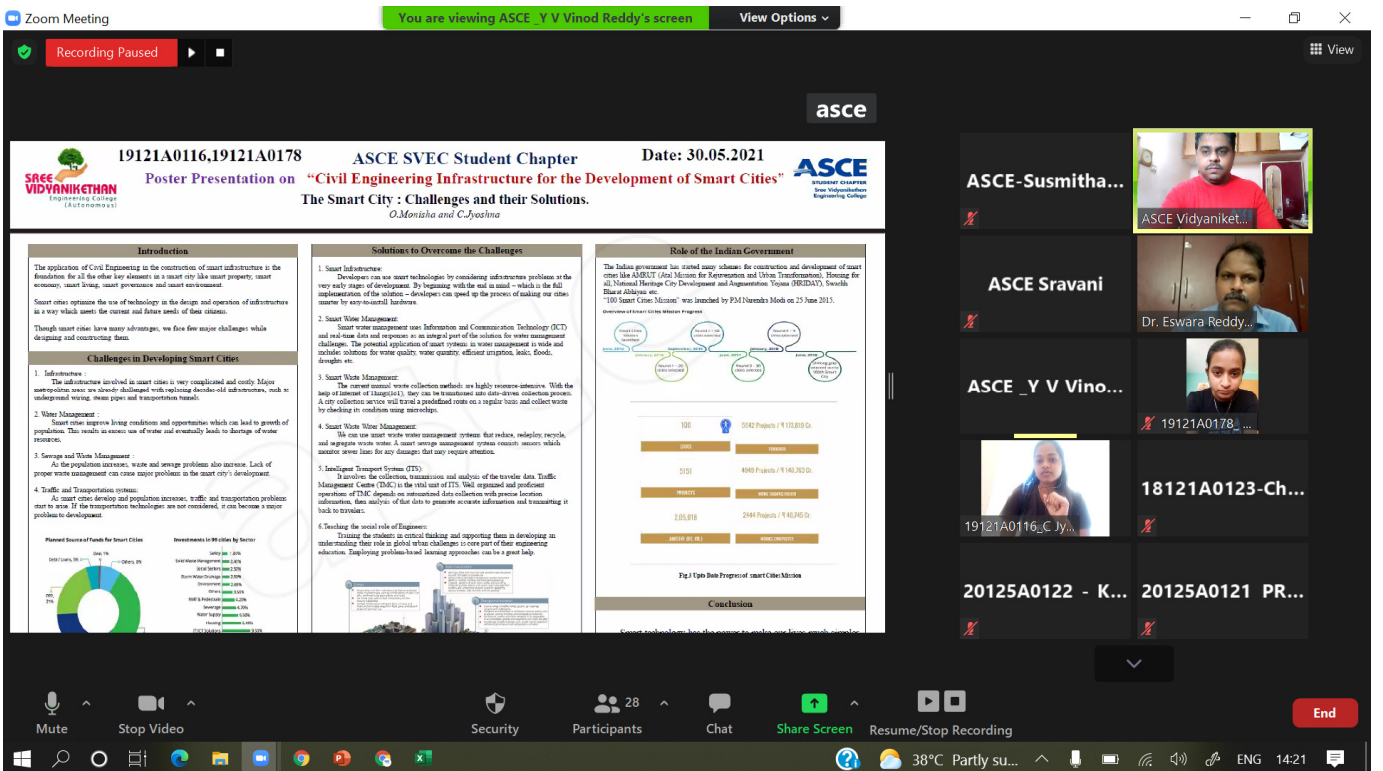
Online Poster Presentation
on
"Civil Engineering Infrastructure for the Development of Smart Cities"
May 30, 2021 (Sunday)
Organized by
ASCE SVEC Student Chapter
Department of Civil Engineering

Chief Patrons: Dr. H. Mohan Babu (Chairman, SVET), Sri. Vishnu Manchu (CEO, SVET)
Patron: Dr. B. M. Satish (Principal, SVEC)
Convener: Dr. O. Eswara Reddy (Faculty Advisor, ASCE SVEC Student Chapter and Chairman, Dept. of Civil Engg.)
Coordinator: Mr. D. V. Purushotham (Coordinator, ASCE SVEC Student Chapter)

Dr. Eswara Reddy Orekanti

Mute | Stop Video | Security | Participants (27) | Chat | Share Screen | Pause/Stop Recording | End

Dr. O. Eswara Reddy, Professor, HoD and BOS Chairman & Faculty Advisor of ASCE SVEC Student Chapter addressing the Students



Zoom Meeting | You are viewing ASCE - Y V Vinod Reddy's screen | View Options

Recording Paused

19121A0116, 19121A0178 | ASCE SVEC Student Chapter | Date: 30.05.2021

Poster Presentation on **"Civil Engineering Infrastructure for the Development of Smart Cities"**
The Smart City : Challenges and their Solutions.
O.Monika and C.Jyestha

Introduction: The application of Civil Engineering in the construction of smart infrastructure is the foundation for all the other key elements in a smart city like smart property, smart economy, smart living, smart governance and smart environment. Smart cities optimize the use of technology in the design and operation of infrastructure in a way which meets the current and future needs of the citizens. Though smart cities have many advantages, we face few major challenges while designing and constructing them.

Challenges in Developing Smart Cities:

- Infrastructure:** The infrastructures involved in smart cities is very complicated and costly. Major metropolitan areas are already challenged with replacing decades-old infrastructures, such as underground wiring, sewage pipes and transportation tunnels.
- Water Management:** Smart cities improve living conditions and opportunities, which can lead to growth of population. This results in excess use of water and eventually leads to shortage of water resources.
- Waste and Storm Management:** As the population increases, waste and sewage problems also increase. Lack of proper waste management can cause major problems in the smart city's development.
- Traffic and Transportation systems:** As smart cities develop and population increases, traffic and transportation problems start to arise. If the transportation technologies are not considered, it can become a major problem in development.

Solutions to Overcome the Challenges:

- Smart Infrastructure:** Developers can use smart technologies by considering infrastructure problems at the very early stages of development. By beginning with the end in mind – which is the full implementation of the solution – developers can speed up the process of making our cities smarter by easy-to-install hardware.
- Smart Water Management:** Smart water management uses Information and Communication Technology (ICT) and real-time data and requires an integral part of the solution for water management challenges. The potential application of smart systems in water management is wide and includes solutions for water quality, water quantity, efficient irrigation, leaks, floods, droughts etc.
- Smart Waste Management:** The current manual waste collection methods are highly inefficient. With the help of Internet of Things (IoT), they can be transformed into data-driven collection process. A core collection service will track a predefined route on a regular basis and collect waste by checking its condition using sensors.
- Smart Waste Water Management:** We can use smart waste water management systems that reduce, re-use, recycle and separate waste water. A smart sewage management system records sensors which monitor sewer lines for any damages that may require attention.
- Intelligent Transport System (ITS):** To analyze the collection, transmission and analysis of the travel data, Traffic Management Centre (TMC) is the vital part of ITS. TMC organized and professional operators of TMC depends on real-time data collection with precise location information, data analysis of that data to generate accurate information and monitoring at back to controls.
- Developing the social role of Engineers:** Training the students in critical thinking and reporting them in developing an understanding their role in global while challenges is one part of their engineering education. Employing problem-based learning approaches can be a great help.

Role of the Indian Government: The Indian government has started many schemes for construction and development of smart cities like AMRUT (Atal Mission for Rejuvenation and Urban Transformation), Housing for All, National Smart City Development and Implementation Scheme (NSCID), Smart Cities Mission etc. "100 Smart Cities Mission" was launched by PM Narendra Modi on 25 June 2015.

Planned Source of Funds for Smart Cities:

| Source | Amount |
|--------------------|-----------------------|
| Central Government | ₹ 1,00,000 Cr. |
| State Government | ₹ 1,00,000 Cr. |
| Local Government | ₹ 1,00,000 Cr. |
| Private Sector | ₹ 1,00,000 Cr. |
| Foreign Investment | ₹ 1,00,000 Cr. |
| Other Sources | ₹ 1,00,000 Cr. |
| Total | ₹ 5,00,000 Cr. |

Investments by 100 Cities by Sector:

| Sector | Investment |
|----------------|-----------------------|
| Water | ₹ 1,00,000 Cr. |
| Waste | ₹ 1,00,000 Cr. |
| Transportation | ₹ 1,00,000 Cr. |
| Energy | ₹ 1,00,000 Cr. |
| Healthcare | ₹ 1,00,000 Cr. |
| Education | ₹ 1,00,000 Cr. |
| Other | ₹ 1,00,000 Cr. |
| Total | ₹ 5,00,000 Cr. |

Fig 1: Key Data Progress of smart Cities Mission

| Category | Value |
|----------|--------------------------------|
| 100 | 5042 Projects / ₹ 1,10,810 Cr. |
| 50% | 4900 Projects / ₹ 1,01,762 Cr. |
| 40% | 1995 Cr. |
| 20% | 2,05,816 |
| 10% | 2,044 Projects / ₹ 46,240 Cr. |
| 5% | 4900 Cr. |

Conclusion:

ASCE - Susmitha... | ASCE Sravani | ASCE - Y V Vinod Reddy... | 19121A0178... | 18121A0123-Ch... | 19121A0116_C Jy... | 20125A0122 - K... | 20125A0121 PR...

Mute | Stop Video | Security | Participants (28) | Chat | Share Screen | Resume/Stop Recording | End

Mr. D.V. Purushotham, Coordinator of ASCE SVEC Student Chapter explaining the Instructions to Participants in Poster Presentation

Zoom Meeting | You are viewing ASCE_Y V Vinod Reddy's screen | View Options

Recording... | 29 Participants | Chat | Share Screen | Pause/Stop Recording | End

19121A0116, 19121A0178 | ASCE SVEC Student Chapter | Date: 30.05.2021

Poster Presentation on "Civil Engineering Infrastructure for the Development of Smart Cities"
The Smart City : Challenges and their Solutions.
O.Monisha and C.Jyosha

Introduction
The explosion of Civil Engineering in the construction of smart infrastructure in the last few decades has led to a renaissance in smart city development. Smart cities optimize the use of technology in the design and operation of infrastructure in a way which saves the cost and time and of their citizens.

Challenges in Developing Smart Cities

- 1. Infrastructure:** The infrastructure involved in smart cities is very complicated and costly. Major transportation assets are heavily challenged with replacing decade-old infrastructure, such as transportation, water, power, and transportation assets.
- 2. Urban Management:** Smart cities improve living conditions and opportunities which can lead to growth of population. This leads to excess use of water and electricity, leading to shortage of water resources.
- 3. Security and Urban Management:** As the population increases, crime and security problems also increase. Lack of proper waste management can cause major problems in the smart city's development.
- 4. Traffic and Transportation:** As smart cities develop and population increases, traffic and transportation problems arise. One of the transportation technologies are autonomous, it can reduce a major problem in development.

Solutions to Overcome the Challenges

- 1. Smart Infrastructure:** Development can use smart technology by considering infrastructure solutions at the very early stage of development. By beginning with the end in mind - which is the full implementation of the solution - developers can spend up the process of making end state easier to implement.
- 2. Smart Urban Management:** Smart urban management uses Information and Communication Technology (ICT) and real-time data and responses as an integral part of the solution for more cost-effective solutions. The potential application of smart systems in urban management is to reduce and include solutions for water quality, waste quantity, efficient irrigation, leaks, floods, droughts, etc.
- 3. Smart Urban Management:** The use of smart urban management systems that reduce, regulate, recycle, and separate waste waste. A smart waste management system collects sensors which monitor street bins for any change for any system issues.
- 4. Smart Urban Management:** It involves the collection, transmission and analysis of the traveler data. Traffic Management Center (TMC) is the most used ICT. TMC supports and provides operations of TMC. TMC depends on accumulated data collection with precise location information, data analysis of these data to process accurate information and transmitting it back to drivers.
- 5. Testing the road side of Engineers:** Changing the system is critical thinking and supporting data in developing an engineering team role in global market challenges is one part of their engineering education. Engineering education training approach can be great help.

Role of the Indian Government
The Indian government has started many schemes for construction and development of smart cities like AMRUT (Atal Mission for Rejuvenation and Urban Transformation), Smart Cities Mission, National Smart City Development and Augmentation Yojana (S-CITY), Smart Cities Alliance, etc. 100 Smart Cities Mission: was launched by PM Narendra Modi on 25 Jan 2015.

Conclusion
Smart technology has the power to make our lives much simpler, especially in highly populated urban areas. Implementing this technology should be done in a carefully planned and highly secured manner. Rather than just focusing on the solutions for challenges, engineers should also consider how it will affect people. Urban technology, city governments and communities of people come together to improve the quality of life for everyone involved, that's when a city truly becomes "smart".

ASCE-Susmitha... | ASCE Sravani

Participation by Ms. C. Jyosha and Ms. O. Monisha of II B.Tech. CE II Semester

Zoom Meeting | You are viewing ASCE_Y V Vinod Reddy's screen | View Options

Recording... | 29 Participants | Chat | Share Screen | Pause/Stop Recording | End

18121A0105 | ASCE SVEC Student Chapter | Date: 16.04.2021

Poster Presentation on "Civil Engineering Infrastructure for the Development of Smart Cities"
KINETIC FOOTBALL

Kinetic Football is a sustainable energy source for generating electricity without consuming any natural resources. The purpose of kinetic football is to generate efficient electrical energy using complete properties of materials and movements of human.

Mechanism: There are four types of their construction: Piezoelectric effect, Magnetic Strain, Magneto-strictive, Smart Capacitors.

Piezoelectric effect: The commonly used technology, piezoelectric devices are PZT, PVDF, etc. When an mechanical force is applied to the piezoelectric material, it converts the kinetic energy into electrical energy. Piezoelectric effect is reversible. Charge which can be regulated.

Advantages:
 - These films can be used indoors or outdoors in high traffic areas and generate electricity through pedestrian traffic.
 - It is an efficient film technology, we can supply the power to grids such as pedestrian lighting.
 - It is an completely Renewable & Eco-friendly technology.
 - It can reduce approximately 6.87T tons of excessive CO2 every day emissions by this new technology, by using piezoelectric technology.
 - It reduce the global warming caused while using traditional carbon fuels.
 - It is maintenance free.
 - It is waterproof and deep proof.

Applications in civil engineering:
 - This film can be implemented in the doors of crowded places in airports, railway platforms.
 - Gates can be also used for the production of energy by using walking.
 - Use for energy purposes and in various systems:
 - For street lights.
 - In the home.
 - In airports.
 - In public grounds.

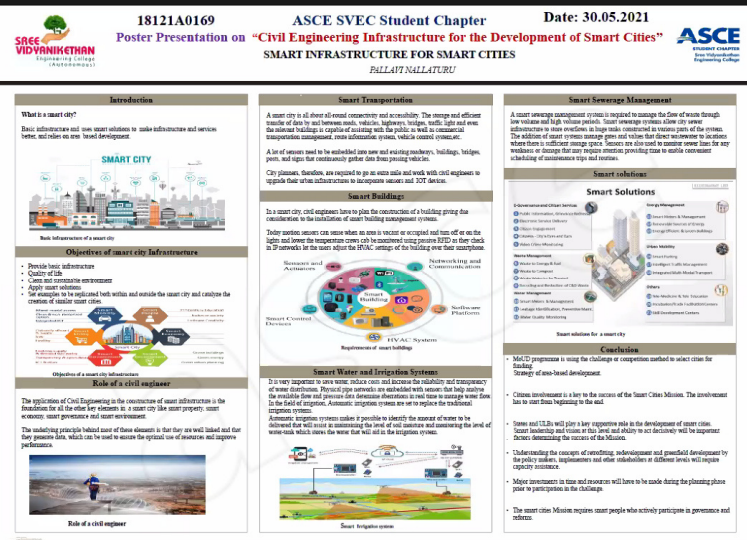
Conclusion:
 - Presenting energy innovation is an integral part of this proposal.
 - These films have been capable of generating 40%
 - They are particularly suitable for implementation in crowded areas.
 - Energy generation, which can be sustained easily implementation.
 - It is a future energy renewable resource using kinetic energy.

"Showcasing alternative energy sources, such as pedestrian football, is just one of many steps we're taking towards supporting a positive, sustainable future for our communities"

ASCE

Participation by Ms. Anupala Navya of III B.Tech. CE II Semester

Zoom Meeting | You are viewing ASCE_Y V Vinod Reddy's screen | View Options



18121A0169 ASCE SVEC Student Chapter Date: 30.05.2021
Poster Presentation on "Civil Engineering Infrastructure for the Development of Smart Cities"
SMART INFRASTRUCTURE FOR SMART CITIES
PALLAVI NALLATHURI

Introduction
What is a smart city?
Basic infrastructure and smart solutions to make infrastructure and services better, efficient on one hand development.

Smart Transportation
A smart city is all about efficient transport and mobility. The smart and efficient transfer of data to and between roads, vehicles, highways, bridges, traffic lights and even the internet building is critical for making the public, as well as commercial transportation management, smart infrastructure systems, vehicle control systems.


Smart Buildings
The smart city, city engineers have plan the construction of buildings using the consideration to the construction of smart building management systems.

Smart Water and Irrigation System
It is very important to save water, reduce cost and increase the reliability and efficiency of water distribution. Smart irrigation systems can monitor the soil moisture, the available time and prevent the water distribution in real time to manage water data in the field engineer. Automatic irrigation systems are also required for the smart irrigation system.

Smart Sewerage Management
A smart sewerage management system is required to manage the flow of waste through low volume and high volume periods. Smart sewerage systems allow city water authorities to have real-time insights into the sewerage network to prevent the overflow. The addition of smart systems manage gas and volume that direct sewerage to its users where there is sufficient storage space. Sewerage also need to ensure sewer lines are free of obstructions and ensure that they require attention providing time to enable convenient scheduling of maintenance to the old network.

Smart Solutions
Smart solutions for a smart city

Conclusion
Multi-SD progress is using the challenge or competition method to select cities for building Strategy of smart-based development.



18121A0169 Pallavi

Mute | Start Video | Security | Participants | Chat | Share Screen | Pause/Stop Recording | End

Participation by Ms. N. Pallavi of III B.Tech. CE II Semester

Zoom Meeting | You are viewing ASCE_Y V Vinod Reddy's screen | View Options



18121a0101 ASCE SVEC Student Chapter Date: 29.05.2021
18121a0123 Poster Presentation on "Civil Engineering Infrastructure for the Development of Smart Cities"
INTELLIGENT BUILDING

WHAT IS AN INTELLIGENT BUILDING
An intelligent building is one that provides a productive and cost-effective environment through optimization of its four basic elements - structure, systems, services and management - and the interrelationships between them. Intelligent buildings help business owners, property managers and occupants to realize their goals in the areas of cost, comfort, convenience, safety, long-term flexibility and sustainability. Intelligent Buildings are equipped with robust telecommunication infrastructure, allowing for more efficient use of resources and increasing the comfort and security of its occupants.

HISTORY OF INTELLIGENT BUILDING
The Intelligent Building concept surfaced in the early 1980's and generally advocated extensive use of electronic (computer) efficient systems to facilitate control of building structure and communication systems for voice and data. The initial concept promoted communication networks to allow centralized word processing services and limited interaction between individual occupants and the Building Automation System.

USES OF IB:

1. Reduce energy consumption
2. Improve building efficiency
3. Predictive maintenance
4. Increase productivity
5. Better use of resources

THREE DIMENSIONS OF IB:

1. Building Automation System: Building Automation System enables the building to respond to external factors and conditions (like climatic variations, fire etc.), simultaneous sensing, control and monitoring of the internal environment and the storage of the data generated.
2. Office Automation System and Local Area Network: It provides management information and decision support and with link to the central computer system.
3. Advanced Telecommunication: It enables rapid communication with outside world, via the central computer system using optical fiber installations, microwave and conventional satellite links.

MAJOR ASPECTS OF IB:

CONCLUSION
The Intelligent Building is clearly the building of the future. The goal of having an intelligent building only starts with early planning in the design stage. In many ways, this assures the design and fulfillment of many green projects today, but it uses technology to provide for a superior space. There are enormous benefits to be gained by creating intelligent buildings.

INTELLIGENT BUILDING IN INDIA

1. The need for Intelligent Buildings rose with the emergence of the IT sector. IT firms need uninterrupted working environment for 365 days a year. Some kind of clock monitoring is also necessary.

2. Techno-campus of Cognizant Technology Solutions, Thorapalkunta on old Manjalayakuram road is one of the Intelligent Buildings in India. It took 14 months to evolve a fully integrated design plan and arrive at the IBM's solution that covers security, safety and automation, and since January 2004 the concept has been functional in the 400,000-sqft complex.

Figure 10: The new region of Cognizant Technology Solutions
Some of the features of Intelligent Building Management System in Cognizant are:

1. Smoke detection systems
2. Bio metric finger scanning systems
3. 73 CCTV cameras
4. Control of HVAC
5. Control of water levels in overhead tanks
6. Automatic lighting control



ASCE -Sushmitha...

ASCE_Y V Vino...

18121a0101_Moha...

18121A0123- Chirut...

Mute | Stop Video | Security | Participants | Chat | Share Screen | Pause/Stop Recording | End

Participation by Mr. Achakatla Mohammed Zahid and Ms. Chirutani Thejaswi of III B.Tech. CE II Semester

Recording... You are viewing ASCE_Y V Vinod Reddy's screen View Options

20125A0115 20125A0122 ASCE SVEC Student Chapter Date: 30.05.2021
Poster Presentation on "Civil Engineering Infrastructure for the Development of Smart Cities"
SMART CITIES – SMART SOLUTION FOR DEVELOPMENT
A.YUGANDEHAR AND K. REDDALAH

Participants: 25

Mute Stop Video Security Participants Chat Share Screen Pause/Stop Recording End

Participation by Ms. N. Pallavi of II B.Tech. CE II Semester

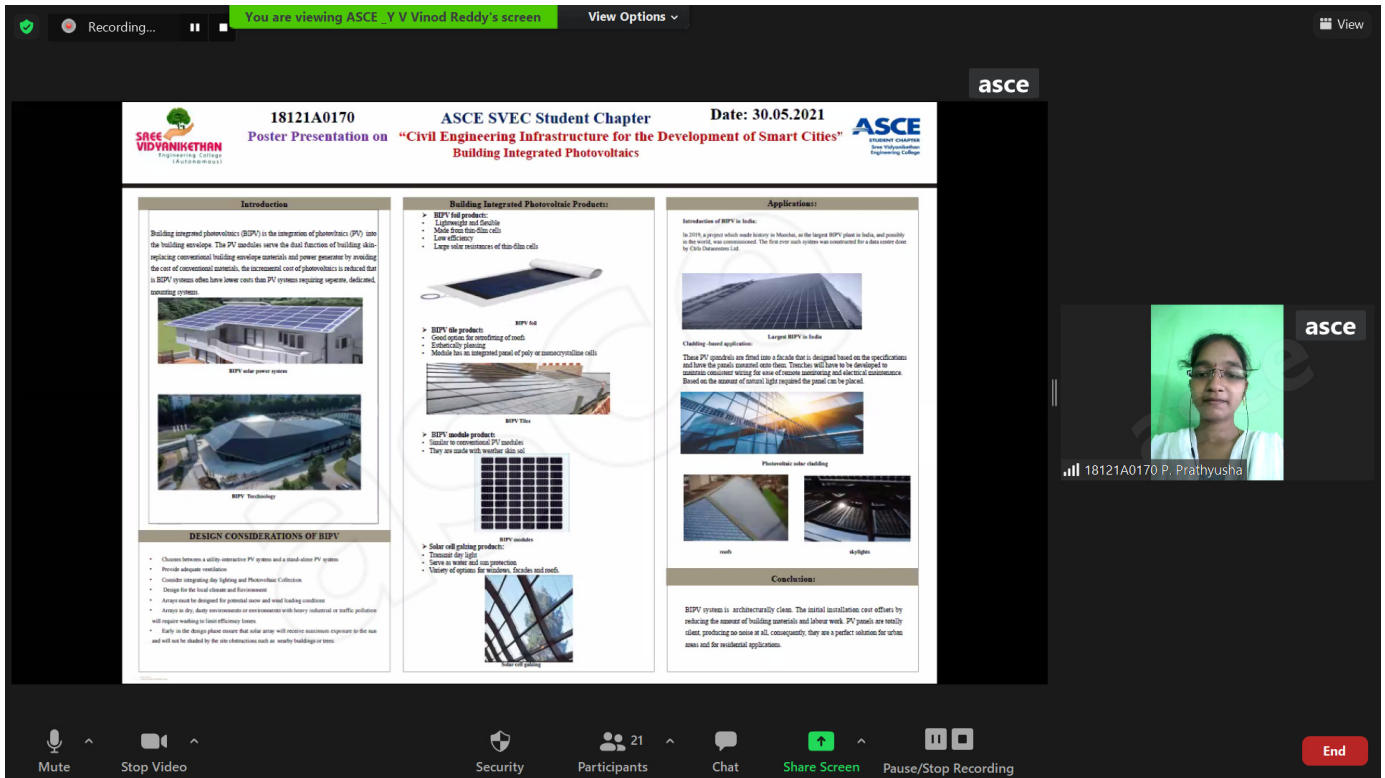
Recording... You are viewing ASCE_Y V Vinod Reddy's screen View Options

19121A0142,19121A0129 ASCE SVEC Student Chapter Date: 16.04.2021
Poster Presentation on "Civil Engineering Infrastructure for the Development of Smart Cities"
Smart cities:Development Challenges and their solutions
K.Likitha sree G.Harshitha

Participants: 22

Mute Stop Video Security Participants Chat Share Screen Pause/Stop Recording End

Participation by Ms. N. Pallavi of II B.Tech. CE II Semester



18121A0170 ASCE SVEC Student Chapter Date: 30.05.2021
Poster Presentation on "Civil Engineering Infrastructure for the Development of Smart Cities"
Building Integrated Photovoltaics

Introduction
Building integrated photovoltaics (BIPV) is the integration of photovoltaic (PV) into the building envelope. The PV modules serve the dual function of building cladding and generating conventional building envelope materials and power generation by mounting the cost of conventional materials, the incremental cost of photovoltaics is reduced. In BIPV systems there are lower costs than PV systems requiring separate dedicated mounting systems.

Building Integrated Photovoltaic Products:

- BIPV full products:**
 - Lightweight and flexible
 - Monocrystalline thin-film cells
 - Low efficiency
 - Large area membranes of thin-film cells
- BIPV full products:**
 - Conductivity for mounting of roof
 - Estheticity planning
 - Module has an integrated panel of poly or monocrystalline cells
- BIPV module products:**
 - Similar to conventional PV products
 - They are made with monocrystalline cells
- Solar cell paneling products:**
 - Transmit day light
 - Serve to resist air penetration
 - Variety of options for modules, frames and roofs

Applications:
Introduction of BIPV in India
In 2019, a project which made history in Mumbai, as the largest BIPV plant in India, and possibly in the world, was commissioned. The first ever such system was commissioned for a data center done by CDS Datacenters Ltd.

Checking sheet applications:
These PV products are ideal for a facade that is designed based on the specifications and have the panels mounted on a frame. These will have to be developed to maintain structure during the use of extreme weathering and other circumstances. Based on the amount of natural light required the panel can be placed.

Photovoltaic solar shading
mesh skylight

Conclusion:
BIPV systems is architecturally clean. The initial installation cost differs by reducing the amount of building materials and labor work. PV panels are readily install, producing no noise at all. Consequently, they are a perfect solution for urban areas and for residential applications.

Participation by Ms. Pathikonda Prathyusha of III B.Tech. CE II Semester



18121A0188.87 ASCE SVEC Student Chapter Date: 30.05.2021
Poster Presentation on "Civil Engineering Infrastructure for the Development of Smart Cities"
OUR FUTURE HOME

GREEN ARCHITECTURE

- Sustainable Architecture
- Constructed with eco-friendly materials
- Design green walls and green roofs
- Energy efficiency
- Reduces global warming

SMART TRANSPORTATION

- Solar roads
- Launch in charge generates charge electric vehicles, pedicab, heat and CO2 emissions
- CO2 emissions are stored
- Reduces accidents

SMART IDEAS

- Life is better if city is smarter
- Simple solution comes in 3D world
- Cloud to us, globe
- Offer users to exchange ideas for resources
- Micro houses
- Affordable housing for poor people
- Built with sewerage system
- Sustainable weather house, cooler inside

SAFETY MEASURES

- Proper risk and management
- Safety during and after construction
- Experienced engineers who have very knowledge for development
- Safety approval standard diagrams
- Reduce failure
- Safety approval fee

SMART WATER SUPPLY & SEWERAGE SYSTEM

Data collection using sensor systems

Advanced data analysis

Smart water and wastewater treatment and management


- Smartest of things (IoT)
- Smart digital technology
- Pipes are embedded with sensors
- 3D model and sensor flow levels
- Efficiency in water supply, irrigation, collecting sewerage increases
- Generate water
- Separate sewerage pipes for rain water and drainage water

EFFECTS

- Improves quality of life
- Reduces pollution
- Energy efficiency
- They are environment friendly
- Sustainable environment
- Improves connectivity among citizens
- Improved transportation
- Efficient public utilities
- Reduces life cycle
- Less traffic, cleaner air
- Better use of space
- Economic development
- Security
- Traffic congestion

Participation by Ms. Swetha Priya Gadikota and Ms. T. Manasa of III B.Tech. CE II Semester

Recording... You are viewing ASCE_Y V Vinod Reddy's screen View Options



20125A0103


ASCE SVEC Student Chapter

Poster Presentation on "Civil Engineering Infrastructure for the Development of Smart Cities"

SMART BUILDINGS INFRASTRUCTURE IN SMART CITIES

D. TEJASWINI

Date: 30.05.2021



asce

INTRODUCTION

People's concentration in smart cities... (text continues)

ENVIRONMENTAL BENEFITS OF SMART BUILDINGS

Smart buildings are designed for long-term sustainability... (text continues)

ADVANTAGES AND DISADVANTAGES OF SMART BUILDINGS

ADVANTAGES OF SMART BUILDINGS

- Higher levels of security and safety
- Improved operation for users and administrators
- Reduced energy consumption
- Increased productivity and efficiency
- Reduced operational and maintenance costs
- Enhanced safety and security
- Improved user experience
- Increased energy efficiency
- Reduced operational and maintenance costs
- Improved user experience

DISADVANTAGES OF SMART BUILDINGS

- Very high initial cost
- Complex building layout
- Increased complexity of system

FEATURES OF SMART BUILDINGS

SYSTEMS ARE CONNECTED


SENSORS AND DATA

ATTENTION

FUNDAMENTAL ASPECTS OF SMART BUILDINGS

HONEYWELL SMART BUILDINGS SYSTEM

The Honeywell Smart Building System has been developed in a network framework... (text continues)



CONCLUSION

The smart building is the one of the most important systems in a building... (text continues)

Mute

Stop Video

Security

Participants: 20

Chat


Share Screen

Pause/Stop Recording

End

Participation by Ms. Dasari Tejaswini of II B.Tech. CE II Semester

Recording... You are viewing ASCE_Y V Vinod Reddy's screen View Options



20125A0105, 20125A0121

ASCE SVEC Student Chapter

Poster Presentation on "Civil Engineering Infrastructure for the Development of Smart Cities"

SMART GRID

AMERICAN SOCIETY OF CIVIL ENGINEERING

ASCE

asce

INTRODUCTION

Smart Grid is an electrical grid with Automation, communication and IT system that can monitor the power flow from the point of power plant to the point of consumers... (text continues)

RENEWABLE ENERGY RESOURCE

AMR (Automated Meter Supply) is the present supply system where the supply of the electricity is one way direction... (text continues)

COMPARISON

| Existing Grid | Smart Grid |
|------------------------|------------------------|
| Electromechanical | Digital |
| One-way communication | Two-way communication |
| Centralized generation | Distributed generation |
| Few sensors | Sensors throughout |
| Manual monitoring | Self-monitoring |
| Manual restoration | Self-healing |
| Failures and blackouts | Adaptive and islanding |
| Limited control | Pervasive control |
| Few customer choices | Many customer choices |

SMART METER

Smart meter is the meter which supply and control the flow of electricity... (text continues)

CONCLUSION

Smart Grid is the smart way to transmit the power in controlled manner from generation unit to consumers... (text continues)

SMART APPLICATIONS

SMART Grid consist of various applications which helps to monitor, communicate and control the flow of electricity... (text continues)

Mute

Stop Video

Security

Participants: 18

Chat

Share Screen

Pause/Stop Recording

End

Participation by Mr. Gurram Ranganatha Teja and Kalluri Praneeth Kumar Reddy of II B.Tech. CE II Semester



ASCE SVEC Student Chapter Date: 16.04.2021

Poster Presentation on "Civil Engineering Infrastructure for the Development of Smart Cities"

Infrastructure and its application

Introduction

- Smart city programs provide a range of technologies that can be applied to solve infrastructure problems associated with aging infrastructure and increasing demands.
- The potential for infrastructure and urban improvement remains unrealized, however, due to technical, financial, and social constraints and criticisms that limit the implementation of smart cities concepts for infrastructure management.
- The smart technologies including sensors, crowd-sourcing and citizen science, actuators, data transmission, Internet of Things, big data analytics, data visualization, and blockchain, which can be used for infrastructure management.
- The civil engineering domain, including transportation systems, water systems, air quality, energy infrastructure, solid waste management, construction engineering and management, structures, and geotechnical systems.
- Gaps in the application of smart technologies for infrastructure systems are identified, and we highlight how the civil engineering profession can adopt new roles toward the development of smart cities applications.
- A "smart city" is one that has developed technological infrastructure that enables it to collect, aggregate, and analyze real-time data to improve the lives of its residents.

Importance of Transportation

- They play an important role in the economic, social and commercial development of the country.
- They help in cultural development of the country.
- They help in political development of the country.
- It plays a vital role in development of rural areas of the country.
- They improve the employment opportunities.
- Improves the contact between two countries.
- Improves the living standard of the country.
- It helps to improve science and technology.
- It helps in industrial development throughout the country.

Smart building

A smart building is any structure that uses automated processes to automatically control the building's operations including heating, ventilation, air conditioning, lighting, security and other systems. A smart building uses sensors, actuators and microchips, in order to collect data and manage it according to a business' functions and services. This infrastructure helps owners, operators and facility managers improve asset reliability and performance, which reduces energy use, optimizes how space is used and minimizes the environmental impact of buildings.

Smart sewerage management

Real-time prediction of flooding is vital for the successful future operational management of the UK sewerage network. Recent advances in smart infrastructure and the emergence of the Internet of Things (IoT), presents an opportunity within the wastewater sector to harness and report in real-time sewer condition data for operation management.

Conclusion

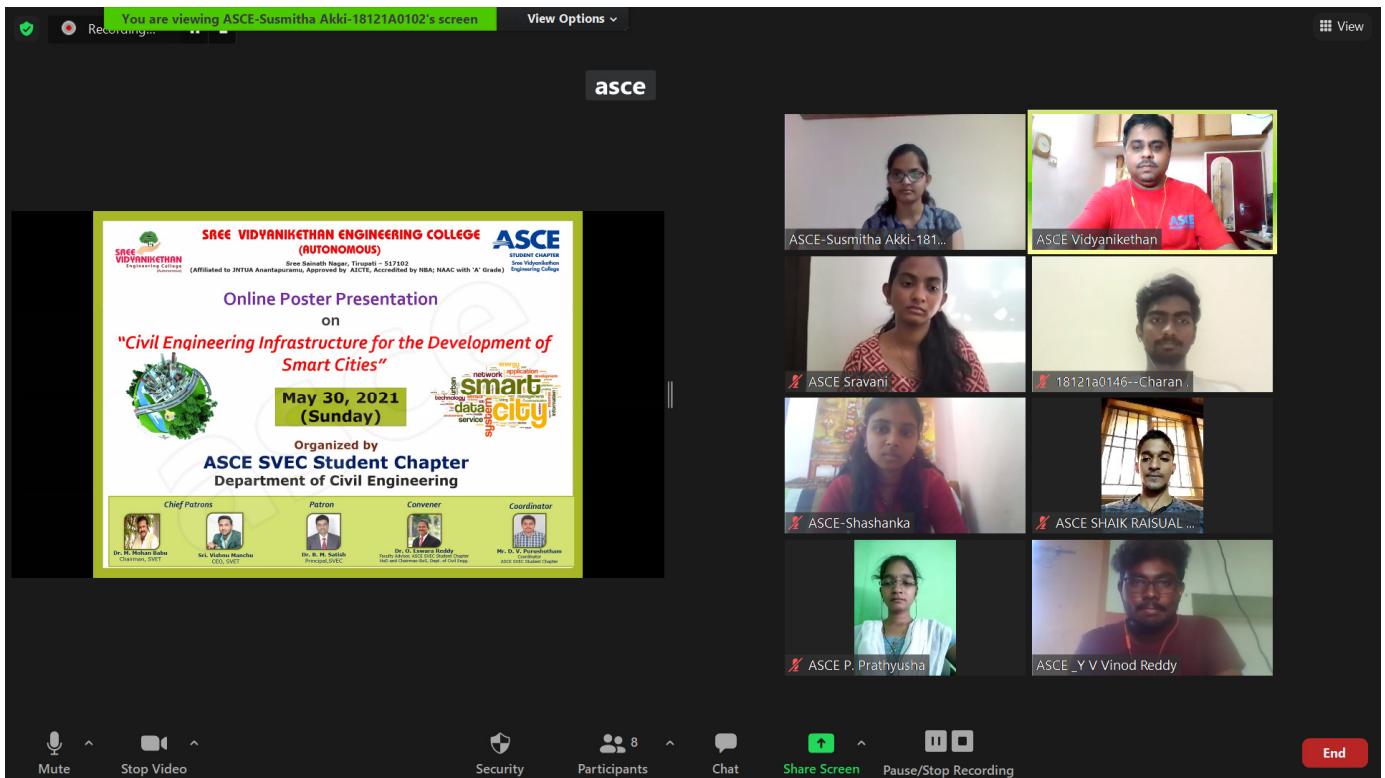
Smart cities use data and technology to create efficiencies, improve sustainability, create economic development, and enhance quality of life factors for people living and working in the city. It also means that the city has a smarter energy infrastructure. A smart city is an urban area that uses different types of electronic methods, and sensors to collect data. Insights gained from that data are used to manage assets, resources and services efficiently; in return, that data is used to improve the operations across the city. Smart city technology allows city officials to interact directly with both community and city infrastructure and to monitor what is happening in the city and how the city is evolving. A smart city uses information and communication technology (ICT) to improve operational efficiency, share information with the public and provide a better quality of government service and citizen welfare.

SMART WATER IRRIGATION SYSTEM

Smart irrigation systems are a combination of an advanced technology of sprinklers with nozzles that improve coverage and irrigation controllers that use weathering and water conservation systems that monitor moisture-related conditions on your property and automatically adjust watering to optimal levels.

Civil engineer play a an important role in development of smart cities

Participation by Ms. Shaik Arkat Mahamuda and Ms. Shaik Mahaboob Gouse Anisha of I B.Tech. CE II Semester



ASCE

SREE VIDYANIKETHAN ENGINEERING COLLEGE (AUTONOMOUS)
Sree Sainath Nagar, Tirupati – 517102
(Affiliated to JNTUA Anantapuram, Approved by ASCE, Accredited by NBA; NAAC with 'A' Grade)

Online Poster Presentation on "Civil Engineering Infrastructure for the Development of Smart Cities"

May 30, 2021 (Sunday)

Organized by ASCE SVEC Student Chapter Department of Civil Engineering

Chief Patrons: Dr. M. Prabhakar (Chairman, SVEC), Mr. V. Venkatesh (Vice-Chairman, SVEC)

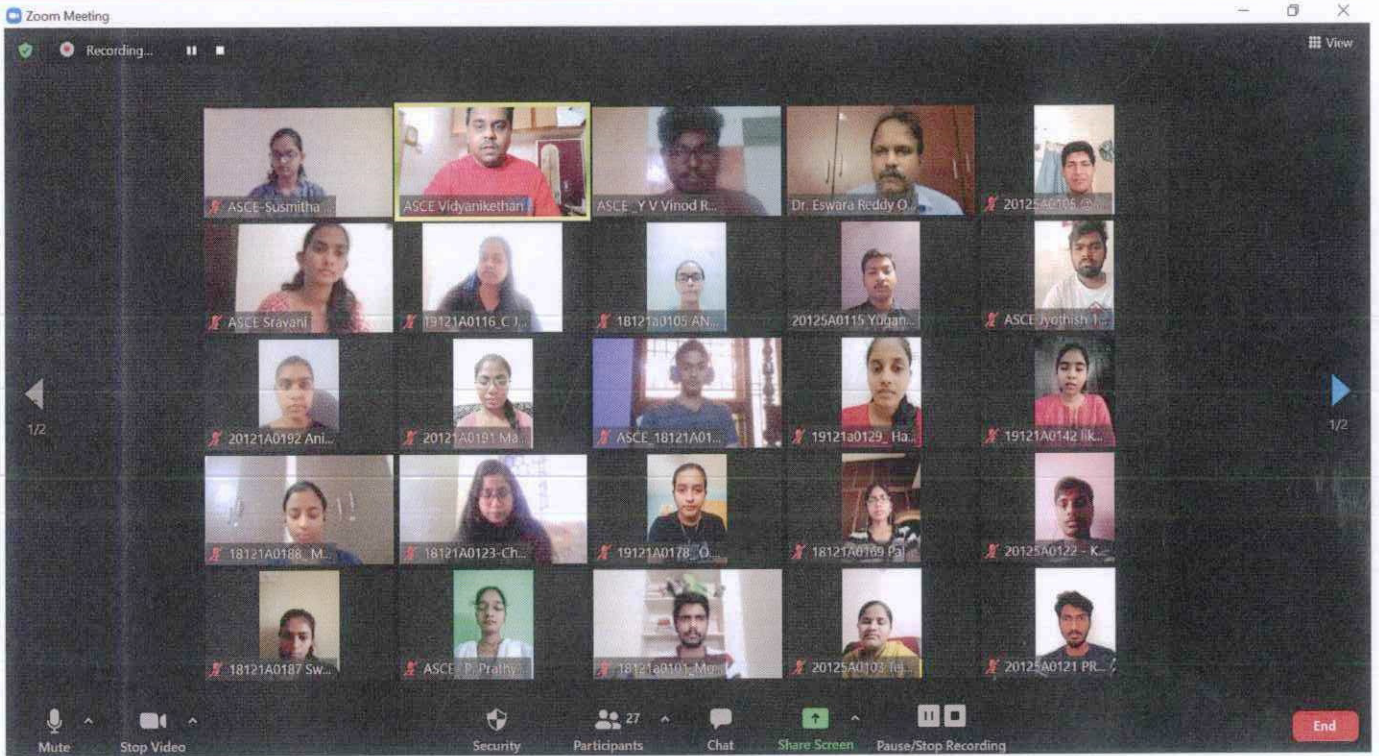
Patron: Mr. D. V. Purushotham (Principal, SVEC)

Convener: Mr. D. V. Purushotham (Coordinator, ASCE SVEC Student Chapter)

Coordinator: Mr. D. V. Purushotham (Coordinator, ASCE SVEC Student Chapter)

Participants: ASCE-Susmitha Akki-181..., ASCE Vidyanikethan, ASCE Sravani, 18121a0146--Charan..., ASCE-Shashanka, ASCE SHAIK RAISUAL..., ASCE P. Prathyusha, ASCE_Y V Vinod Reddy

Mr. D.V. Purushotham, Coordinator of ASCE SVEC Student Chapter announcing the Prize Winners of Poster Presentation



A Group Photograph with all Participants in Poster Presentation Competition

2/10/2024

(Dr. O. ESWARA REDDY)

Faculty Advisor

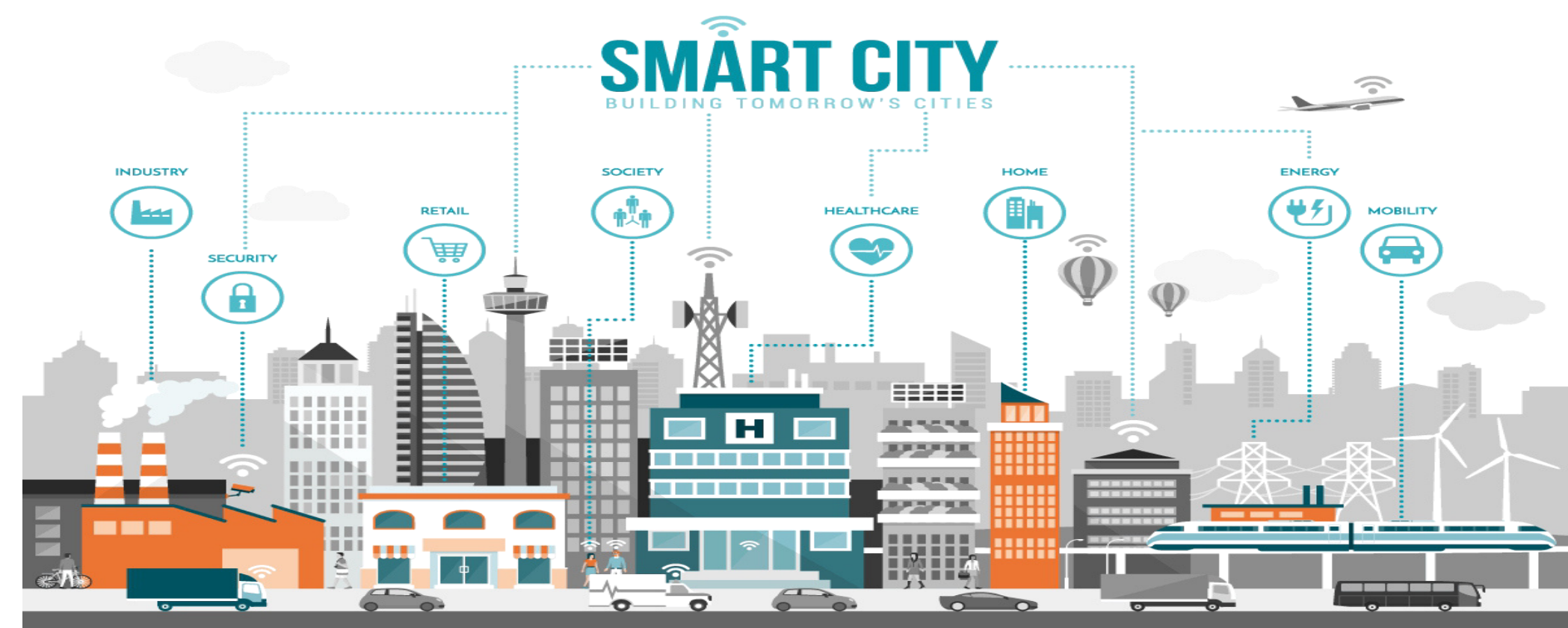
ASCE SVEC Student Chapter

Professor, HoD and Chairman-BOS

Introduction

What is a smart city?

Basic infrastructure and uses smart solutions to make infrastructure and services better, and relies on area based development.



Basic infrastructure of a smart city

Objectives of smart city Infrastructure

- Provide basic infrastructure
- Quality of life
- Clean and sustainable environment
- Apply smart solutions
- Set examples to be replicated both within and outside the smart city and catalyze the creation of similar smart cities.



Objectives of a smart city infrastructure

Role of a civil engineer

The application of Civil Engineering in the constructure of smart infrastructure is the foundation for all the other key elements in a smart city like smart property, smart economy, smart governance and smart environment.

The underlying principle behind most of these elements is that they are well linked and that they generate data, which can be used to ensure the optimal use of resources and improve performance.



Role of a civil engineer

Smart Transportation

A smart city is all about all-round connectivity and accessibility. The storage and efficient transfer of data by and between roads, vehicles, highways, bridges, traffic light and even the relevant buildings is capable of assisting with the public as well as commercial transportation management, route information system, vehicle control system, etc.

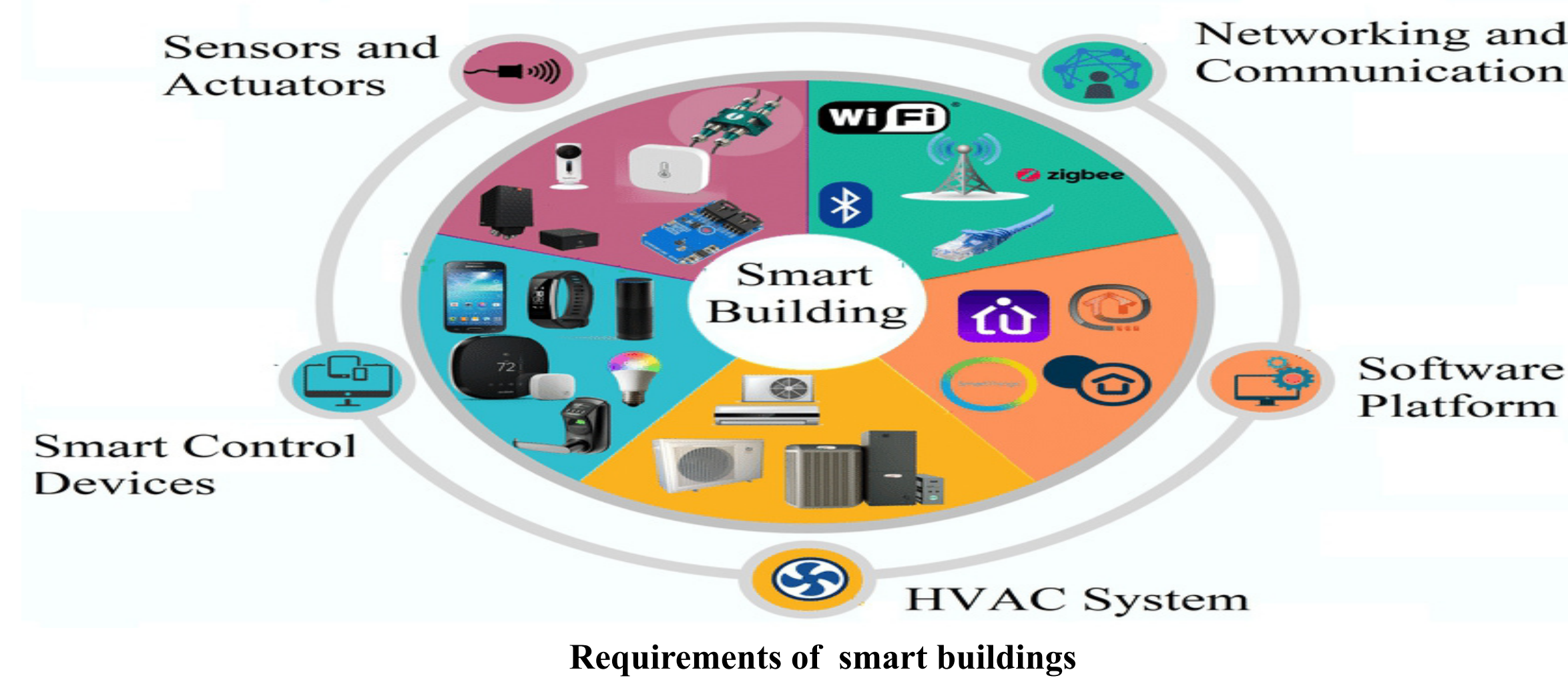
A lot of sensors need to be embedded into new and existing roadways, buildings, bridges, posts, and signs that continuously gather data from passing vehicles.

City planners, therefore, are required to go an extra mile and work with civil engineers to upgrade their urban infrastructures to incorporate sensors and IOT devices.

Smart Buildings

In a smart city, civil engineers have to plan the construction of a building giving due consideration to the installation of smart building management systems.

Today motion sensors can sense when an area is vacant or occupied and turn off or on the lights and lower the temperature crews cab be monitored using passive RFID as they check in IP networks let the users adjust the HVAC settings of the building over their smartphone.

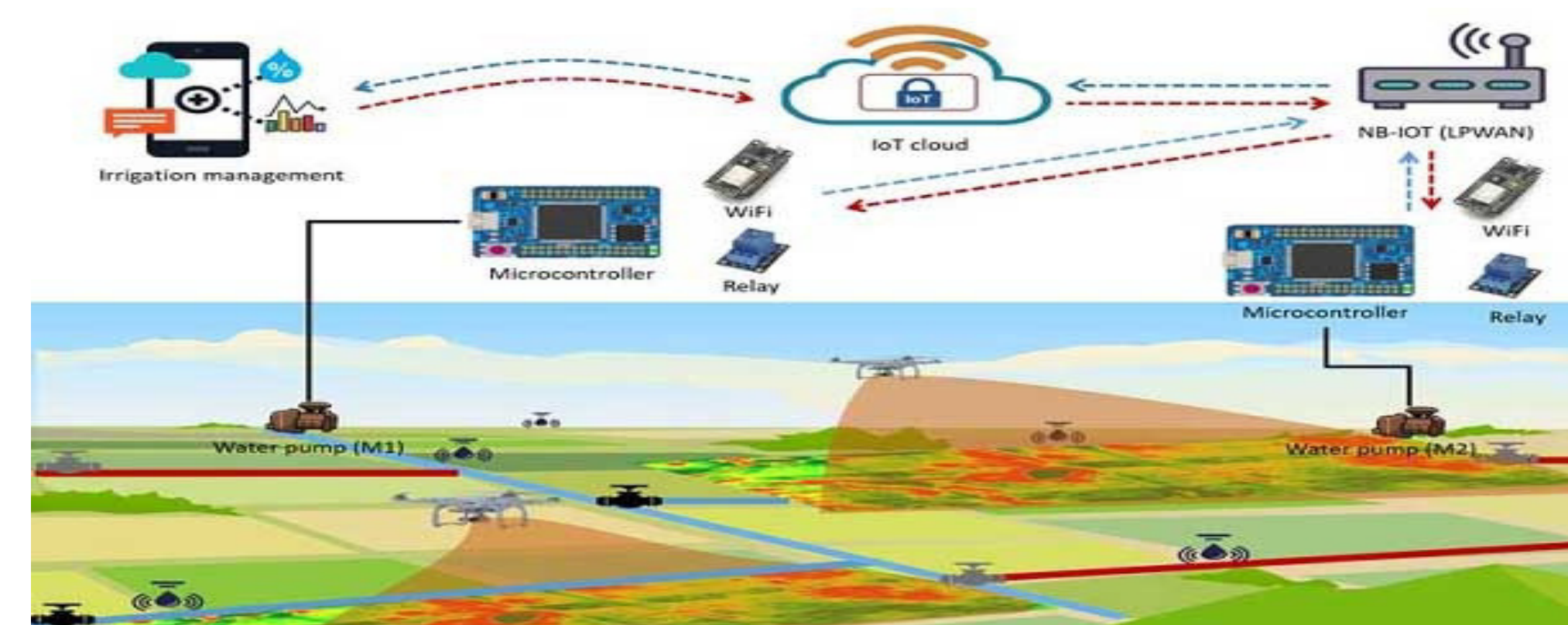


Requirements of smart buildings

Smart Water and Irrigation Systems

It is very important to save water, reduce costs and increase the reliability and transparency of water distribution. Physical pipe networks are embedded with sensors that help analyse the available flow and pressure data determine aberrations in real time to manage water flow. In the field of irrigation, Automatic irrigation system are set to replace the traditional irrigation systems.

Automatic irrigation systems makes it possible to identify the amount of water to be delivered that will assist in maintaining the level of soil moisture and monitoring the level of water-tank which stores the water that will aid in the irrigation system.



Smart Irrigation system

Smart Sewerage Management

A smart sewerage management system is required to manage the flow of waste through low volume and high volume periods. Smart sewerage systems allow city sewer infrastructure to store overflows in huge tanks constructed in various parts of the system. The addition of smart systems manage gates and valves that direct wastewater to locations where there is sufficient storage space. Sensors are also used to monitor sewer lines for any weakness or damage that may require attention providing time to enable convenient scheduling of maintenance trips and routines.

Smart solutions



Smart solutions for a smart city

Conclusion

- MoUD programme is using the challenge or competition method to select cities for funding. Strategy of area-based development.
- Citizen involvement is a key to the success of the Smart Cities Mission. The involvement has to start from beginning to the end.
- States and ULBs will play a key supportive role in the development of smart cities. Smart leadership and vision at this level and ability to act decisively will be important factors determining the success of the Mission.
- Understanding the concepts of retrofitting, redevelopment and greenfield development by the policy makers, implementers and other stakeholders at different levels will require capacity assistance.
- Major investments in time and resources will have to be made during the planning phase prior to participation in the challenge.
- The smart cities Mission requires smart people who actively participate in governance and reforms.

SMART BUILDINGS INFRASTRUCTURE IN SMART CITIES

D. TEJASWINI

INTRODUCTION

- ✓ Rapid urbanization is among the biggest megatrends transforming the Indian economy. To accommodate this mammoth growth in urban population, India needs to develop Smart cities and re-engineer existing ones to improve the quality of life for residents.
- ✓ To address the challenges of urbanization, the government of India has launched an ambitious and transformational scheme to develop 100 Smart Cities. Smart cities would be required to provide basic infrastructure that supports quality of life for residents, a clean and sustainable environment, and smart solutions for their citizens.
- ✓ A Smart Building is the one which provides a productive and cost-effective environment through optimization of four basic elements: structure, systems, services and management, and the interrelationship between them.



FEATURES OF SMART BUILDINGS

◆ **SYSTEMS ARE CONNECTED**

The most fundamental feature of a smart building is that the core systems within it are linked. So, water meters, pumps, fire alarms, power, lighting etc are all connected. This is what makes a building “smart” – the ability of the systems within it to talk to one another.

◆ **USES OF SENSORS AND IOT**

Sensors are an integral part of smart buildings and play an important role in collecting data to inform decisions about where to allocate resources.

◆ **AUTOMATION**

Information is gathered and analysed by the systems that have been put in place in a smart building – importantly, this is done constantly and in real time. This ongoing monitoring allows for automated adjustments that can control conditions across an entire building.

◆ **DATA**

Smart buildings generate a large volume of valuable data about their own use, which is something that regular buildings simply don't do.

FUNDAMENTAL ASPECTS OF SMART BUILDINGS



GREEN: The “green” aspect in buildings is well known, and for good reason. The economic and sustainability benefits of green buildings have been proven through extensive academic and applied research.



SAFE: The “safe” aspect in buildings is not equally well researched or illustrated. The value of human life and property is critical and should be given the highest priority in any buildings



PRODUCTIVE : The conversation around productive buildings is still nascent. However, this is the one area that is likely to see the fastest change in relevance and importance, driven by two major megatrends: connectivity and comfort.

ENVIRONMENTAL BENEFITS OF SMART BUILDINGS

- ◆ An intelligent building starts with an environmentally friendly design. It creates a project that is environmentally friendly and energy efficient ties in closely with many of the intelligent attributes.
- ◆ Smart buildings are designed for long-term sustainability and minimal environmental impact through the selection of recycled and recyclable materials, construction, maintenance and operations procedures.
- ◆ Providing the ability to integrate building controls, optimize operations, and enterprise level management results in a significant enhancement in energy efficiency, lowering both cost and energy usage compared to non-intelligent projects.

HONEYWELL SMART BUILDINGS SYSTEM

- The Honeywell Smart Building Score has been developed as a universal framework for quick, comprehensive, and easy assessment of any building. It can be administered across countries with minimal adaptation. The framework of the Honeywell Smart Building Score is also flexible and adaptable for future enhancements as applications and solutions for smart buildings continue to evolve.
- In simple terms, the Honeywell Smart Building Score focuses on scoring assets that make buildings green (energy efficiency, reuse of resources, use of clean energy), safe and secure (detection and response to threats, controlling access to the facility, securing lives and assets), and comfortable and productive (illumination, thermal comfort, air quality, connectivity, energy availability).
- Building automation provider Honeywell has created a 'Smart Building Score' in which some 2,000 buildings across India were surveyed and a few got space in the top ranking. Honeywell's survey showed that targeted investment in smart buildings can drive economic and environmental benefits, protect human life, safeguard building assets, and support India's goal to develop 100 Smart Cities.
- Honeywell found that airports and hotels are the smartest buildings in India with an average Smart Building Score of 49 and 41 respectively. Indira Gandhi International Airport in New Delhi was voted the Smartest Building in India, which has consistently improved its commitment by winning this same award for three consecutive years. The IGI Airport also captured the awards for being the Smartest Airport Building, as the Greenest, the Safest, and the Most Productive Building in India.

Honeywell
Smart City Solutions



ADVANTAGES AND DISADVANTAGES OF

SMART BUILDINGS

ADVANTAGES OF SMART BUILDINGS

1. Higher level of security and safety
2. Simplified operation for users and administrators
3. Simpler staff tracking
4. Reduced administration costs
5. Smartcards-single card for security and cash transactions
6. Reduced system costs by sharing infrastructure
7. Easier integration into university systems
8. Information can be delivered to all the interested parties in the manner they need
9. Increased mobility-not tied to a specialist workstation
10. Training is minimised, use standard operating environments

DISADVANTAGES OF SMART BUILDINGS

1. Increased complexity of system
2. Very high initial cost
3. Normal building last longer than intelligent building

DIFFERENCE BETWEEN ORDINARY BUILDINGS AND SMART BUILDINGS

- ◆ **SMART BUILDINGS:** Intelligent building adjusts the inside functional aspects such as lighting, ventilation, fire-fighting, air conditioning, etc. automatically with the changes in environmental conditions controlled by computer.
- ◆ The security system, communication system, etc. are coordinated and automatically controlled by computer workstation
- ◆ **ORDINARY BUILDINGS:** Ordinary building there will be different room conditions depending on the changes in the environmental conditions.
- ◆ The security system, communication system, etc. are not coordinated and automatically controlled by computer workstation.

Conclusions

The smart building is the one of the most important systems is a building management platform that ensures all disciplines interact optimally. Smart infrastructure from Siemens intelligence connects smart buildings & industries to adapt and evolve the way we live & work.

- ✓ Smart buildings contribute to the effective management of urban areas, improving connectivity, sustainability & liveability.
- ✓ The Smart building is clearly the building of the future.
- ✓ The benefits of these buildings include cost savings from reduced energy, water and waste, lower operation and maintenance cost. To minimize the energy consumption to a greater scale & to increase the equipments efficiency are the objectives of these buildings.

KINETIC FOOTFALL

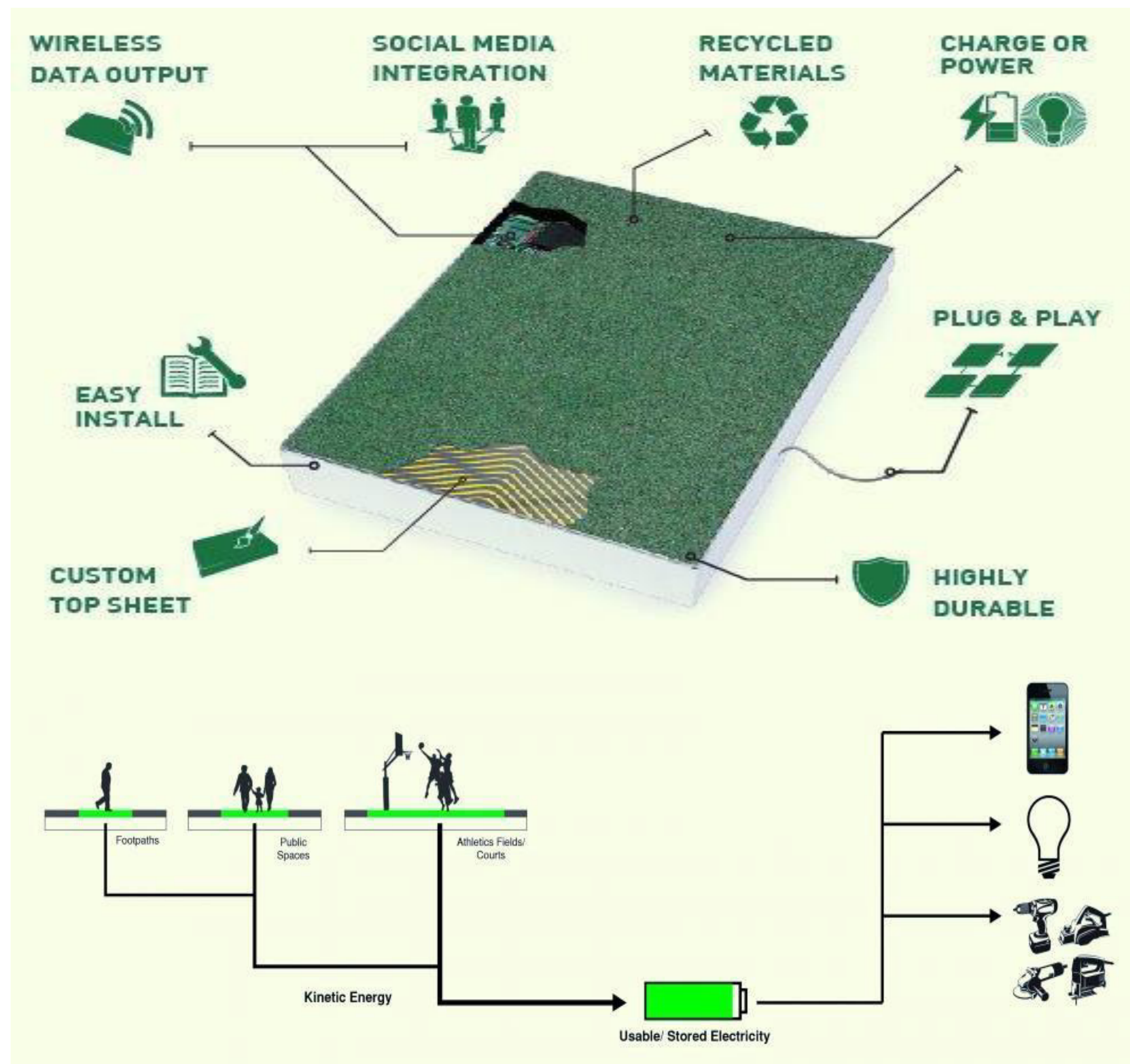
Kinetic footfall is a sustainable energy source for generating electricity without consuming any natural resources. The purpose of kinetic footfall method is to generate efficient electrical energy using complex properties of materials and movements of humans.



In 2017, Pavegen, a UK-based technology company built a sidewalk in London using this kinetic footfall technology. The concept of kinetic footfall based on the principle of piezoelectricity. When the material is compressed the atoms press together, enough to change the properties of electrons.

Materials:

Top surface is made from recycled rubber and stainless steel and base slab is constructed from over 80% recycled materials with concrete.



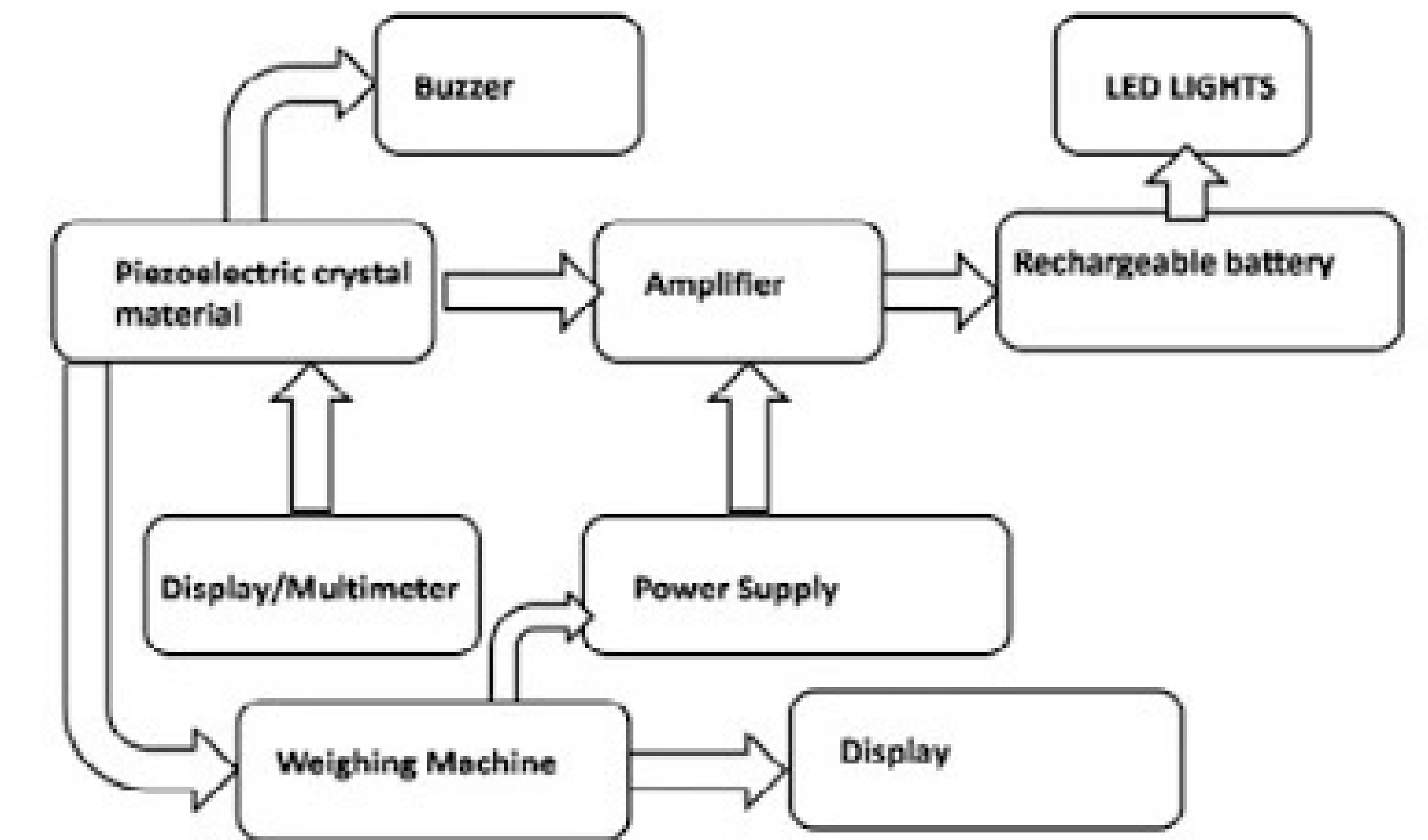
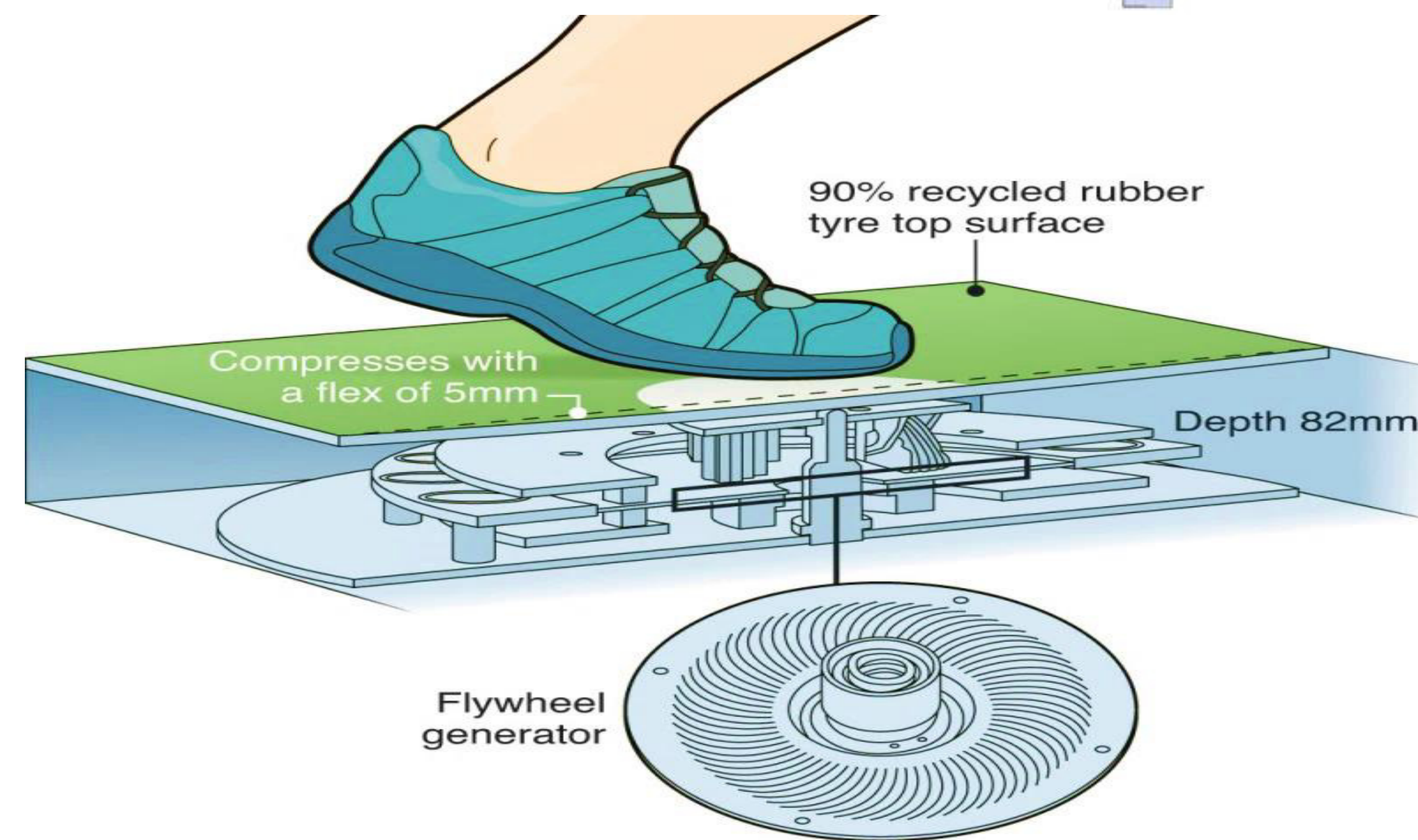
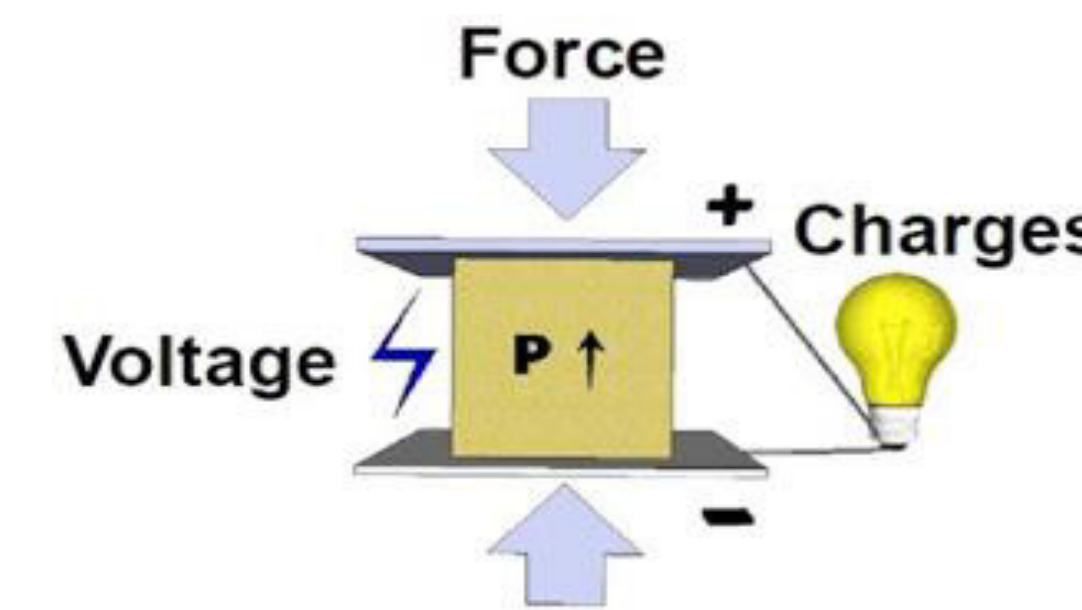
Mechanism:

There are four types of floor mechanisms:

- Piezoelectric effect
- Magnetic Transducers
- Micro-generators
- Static Capacitors



Piezoelectric effect is the commonly-used technology. A piezoelectric element like PZT, PVDF, etc., is used as transducer. It converts the kinetic energy into electrical energy upon stepping on the floor tile. Charges which can be siphoned off.



Advantages:

- These tiles can be used indoors or outdoors in high traffic areas, and generates electricity from pedestrian footfall.
- If we implement this technology, we can supply the power to grids such as pedestrian lighting.
- Tiles are completely Renewable & Eco friendly technology.
- We can reduce approximately 6.817 tons of excessive CO2 every day emissions by tiles into atmosphere, by using pavegen technology.
- To reduce the global warming caused while using traditional carbon fuels.
- Less maintenance cost.
- It is waterproof and damp proof.

Applications in civil engineering:

- This idea can be implemented in the floors of crowded places as footpaths, railway platforms etc.
- Stairs can be also used for production of energy by mere walking.
- Used for security purposes and in various alarm systems.
- For street lights.
- In bus station.
- In airports.
- In play grounds.

Conclusion:

- Promoting energy awareness is an integral part of this proposal.
- Piezo tiles have been capable for generating 40V.
- They are particularly suitable for implementation in crowded areas.
- Energy generation source must be something easily implemented.
- It is a future energy renewable resource using kinetic energy.

“Showcasing alternative energy sources, such as pedestrian footfall, is just one of many steps we’re taking towards supporting a positive, sustainable future for our communities”