SREE DATTHA INSTITUTE OF ENGINEERING AND SCIENCE, HYDERABAD

DEPARTMENT OF CIVIL ENGINEERING

EDITORIAL BOARD

Inside:
1. Seminars
2. Guest Lectures
3. Workshops
4. Placements
5. Future plans

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DEPARTMENT OF CIVIL ENGINEERING PROFILE

The department of **Civil Engineering** is one of the most important departments of **Sree Dattha Institute of Engineering and Science (SDES)**. This department was established in the year 2001 and is presently offering Bachelor's Degree in Civil Engineering. The present intake for the Bachelor's program is 120 students. The department carries out a periodic review of its curricula to ensure concurrency and keep abreast with latest technologies and developments in science and technology.

WORKSHOP ON CONCRETE, STABILIZED MUD BLOCKS AND OTHER ALTERNATIVE MATERIALS ARE CURRENTLY USED IN PRACTICE

A Workshop on "Concrete Stabilized Mud Blocks and Other Alternative Materials" was organized by Civil Engineering Department, SDES, Hyderabad from 12/08/17 to 13/08/19. Mr. D Naresh garu from CBIT Hyderabad. He addressed our students at SDES and shared his knowledge. He made the students to know about the concrete stabilized mud blocks and other alternative materials that are currently in use with a power point presentation and there was an excellent response from the students.

STUDENTS ATTENDING THE WORKSHOP ON CONCRETE STABILIZED MUD BLOCKS

WORKSHOP ON ADVANCED INSTRUMENTS FOR SURVEYING SUCH AS TOTAL STATION

This workshoip was organized by Civil Engineering Department from 21/09/17 to 22/09/17 by Dr. P Kesava Rao, Associate professor at MVSR College, Hyderabad. Dr. P Kesava Rao addressed our students at SDES and shared his knowledge highlighting the advanced instruments for surveying such as total station. The students of SDES have gained a practical knowledge regarding the topic.

DR. P KESAVA RAO GARU DELIVERING THE LECTURE

WORKSHOP ON SOFTWARES FOR GEOMETRIC DESIGN OF HIGHWAYS

This lecture was organized by Civil Engineering Department on 15/11/17 by Ms. D Rajitha, Assistant professor at CMR College of Engineering, Hyderabad. Ms. D Rajitha addressed our students at SDES and shared her knowledge with our students. She made the students know the "Softwares for Geometric Design of Highways" with a detailed power point presentation and a clear demonstration of the software.

MS. D RAJITHA ADDRESSING THE STUDENTS OF SDES DURING THE SEMINAR

SEMINAR ON ANALYSIS BY STIFFNESS & FLEXIBILITY METHOD USING SYSTEM APPROACH IS NOT INCLUDED

This event was organized by Civil Engineering Department on 30/10/17 by Mr. G Ganesh Kumar, Senior Site Engineer, Hyderabad. Mr. G Ganesh Kumar addressed our students at SDES and shared his knowledge. He made the students know the Importance of "Analysis by Stiffness & Flexibility Method using System Approach" with a power point presentation that made students understand the topic very well.

THE INTRODUCTION ABOUT THE TOPIC IS GIVEN TO THE STUDENTS

SEMINAR ON SOIL STABILIZATION AND SOIL REINFORCEMENT

This lecture was organized by Civil Engineering Department on 18/11/17 by Mr. B Mohan, Associate Professor, CVR College of Engineering, Hyderabad. Mr. B Mohan addressed our students at SDES and shared his knowledge with our students. He made the students understand the "Soil Stabilization and Soil Reinforcement" with a detailed power point presentation.

MR. B MOHAN ADDRESSING THE STUDENTS OF SDES

FACULTY CORNER

Article by:
A Shruthi, Assistant Professor, Department of Civil Engineering, SDES.

Title: How building design changed after 9/11?

When buildings collapse killing hundreds – or thousands – of people, it's a tragedy. It's also an important engineering problem. The 1995 collapse of the Alfred P. Murrah Federal Building in Oklahoma City and the World Trade Center towers in 2001 spawned many vows to never let anything like those events happen again. For structural engineers like me, that meant figuring out what happened, and doing extensive research on how to improve buildings' ability to withstand a terrorist attack.The attack on the Murrah building taught us that a building could experience what is called "progressive collapse," even if only a few columns are damaged. The building was nine stories tall, made of reinforced concrete. The explosion in a cargo truck in front of the building on April 19, 1995, weakened key parts of the building but did not level the whole structure. Only a few columns failed because of the explosion, but as they collapsed, the undamaged columns were left trying to hold up the building on their own. Not all of them were able to handle the additional load; about half of the building collapsed. Though a large portion of the building remained standing, 268 people died in the areas directly affected by the bomb, and in those nearby areas that could no longer support themselves. (A month after the attack, the rest of the building was intentionally demolished; the site is now a memorial to the victims). A similar phenomenon was behind the collapse of the World Trade Center towers on September 11, 2001, killing nearly 3,000 people. When exposed to the high temperatures created by burning airplane fuel, steel columns in both towers lost strength, putting too much load on other structural supports.Until those attacks, most buildings had been built with defenses against total collapse, but progressive collapse was poorly understood, and rarely seen. Since 2001, we now understand progressive collapse is a key threat. And we've identified two major ways to reduce its likelihood of happening and its severity if it does: improving structural design to better resist explosions and strengthening construction materials themselves.

Borrowing from earthquake protection:
Research has found ways to keep columns and beams strong even when they are stressed and bent. This property is called ductility, and higher ductility could reduce the chance of progressive collapse. It's a common concern when building in earthquake-prone areas.In fact, for years building codes from the American Society of Civil Engineers, the American Institute of Steel Construction and the American Concrete Institute have required structural supports to be designed with high enough ductility to withstand a major earthquake so rare its probability of happening is once every 2,000 years. These requirements should prevent collapse when a massive earthquake happens. But it's not enough to just adopt those codes and expect they will also reduce or prevent damage from terrorist attacks: Underground earthquakes affect buildings very differently from how nearby explosions do.Another key element structural engineers must consider is redundancy: how to design and build multiple reinforcements for key beams and columns so the loss of, say, an exterior column due to an explosion won't lead to total collapse of the entire structure. Few standards exist for redundancy to improve blast resistance, but the National Institute for Building Sciences does have some design guidelines.

Making Concrete stronger:
The materials that buildings are made of also matter. The steel columns in the World Trade Center towers lost strength rapidly when the fire reached 400 degrees Fahrenheit. Concrete heated to that temperature, though, doesn't undergo significant physical or chemical changes; it maintains most of its mechanical properties. In other words, concrete is virtually fireproof.The new One World Trade Center building takes advantage of this. At its core are massive three-foot-thick reinforced concrete walls that run the full height of the building. In addition to containing large amounts of specially designed reinforcing bars, these walls are made of high-strength concrete.

THE NEW ONE WORLD TRADE CENTER BUILDING, MADE WITH HIGH-PERFORMANCE CONCRETE

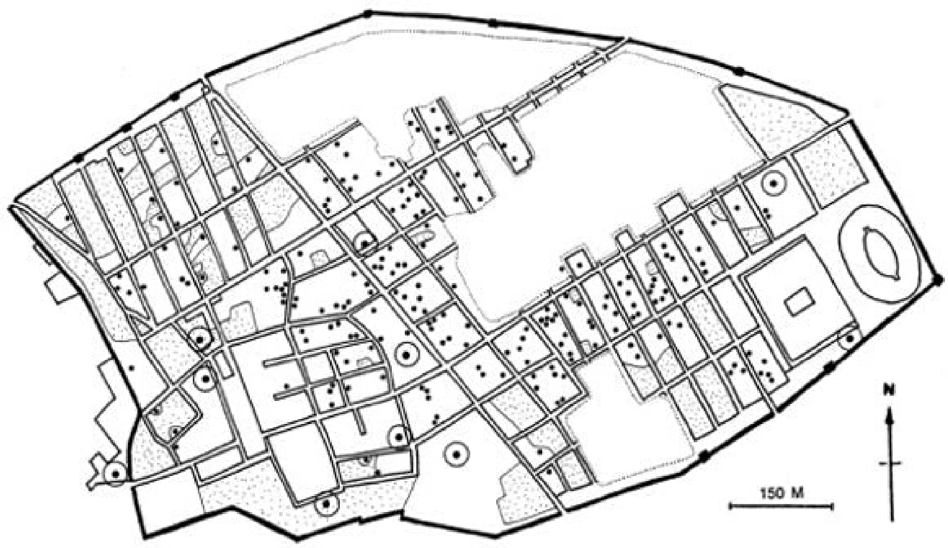
STUDENT CORNER

Article by:
B Srikanth, IV - A , Department of Civil Engineering, SDES.

Title: Talking heads: what toilets and sewers tell us about ancient Roman sanitation

Introduction:
The Etruscans laid the first underground sewers in the city of Rome around 500 BC. These cavernous tunnels below the city's streets were built of finely carved stones, and the Romans were happy to utilize them when they took over the city. Such structures then became the norm in many cities throughout the Roman world.Focusing on life in ancient Rome, Pompeii, Herculaneum and Ostia, I'm deeply impressed by the brilliant engineers who designed these underground marvels and the magnificent architecture that masks their functional purpose. Sewer galleries didn't run under every street, nor service every area. But in some cities, including Rome itself, the length and breadth of the main sewer, the Cloaca Maxima, rivals the extent of the main sewer lines in many of today's cities. We shouldn't assume, though, that Roman toilets, sewers and water systems were constructed with our same modern sanitary goals in mind. The streets of a Roman city would have been cluttered with dung, vomit, pee, shit, garbage, filthy water, rotting vegetables, animal skins and guts, and other refuse from various shops that lined the sidewalks. We moderns think of urban sewers as the means to remove such filth from streets – and of course flush away human waste that goes down our toilets.Researching Roman urban infrastructure for my new book The Archaeology of Sanitation in Roman Italy made me question whether the Romans shared the same vision. The archaeological evidence suggests that their finely constructed sewer systems were more about drainage of standing water than the removal of dirty debris. And Romans' sense of cleanliness and privacy around bathroom matters was quite different from our tender modern sensibilities.

Plenty of toilets, few sewer hookups:
Public and private toilets were sprinkled throughout the city of Pompeii. But despite the city's sewer infrastructure, virtually none of these toilets had sewer connections. We have similar evidence for ancient Herculaneum.In fact, almost every private house in these cities, and many apartment houses in Ostia, had private, usually one-seater, toilets not connected to the main sewer lines. And these cesspit toilets were often situated in the kitchen, where food was prepared! The comforting smells from a hearty stew would have mingled with the gross odors from the nearby open cesspit. Collected waste was either sold to farmers for fertilizer or used in household gardens – which must have made for some pretty stinky garden parties from time to time.According to Ulpian's Digest, written between AD 211 and 222, connections to the sewers from private dwellings certainly were legal. So why didn't property owners hook up to the public sewer lines? One reason may be tied to that fact that Roman sewer openings had no traps. One never could be sure what might climb out of an open sewer pipe and into your house.We have at least one dramatic ancient story that illustrates the danger of hooking your house up to a public sewer in the first or second century AD. The author Aelian tells us about a wealthy Iberian merchant in the city of Puteoli; every night a giant octopus swam into the sewer from the sea and proceeded up through the house drain in the toilet to eat all the pickled fish stored in his well-stocked pantry. Adding to the stench of Roman life, my close examination of ancient plumbing found that many down pipes from house toilets on upper floors would have suffered serious leakage inside the walls as well as oozing onto the outside of the walls too. The fittings of these terracotta down pipes loosened over time, and their contents would have caused stink everywhere.I was able to identify at least 15 upper-story toilets at Pompeii and others at Herculaneum and elsewhere. In some cases, I obtained proof through scientific testing for urine and/or excrement that the spillage was indeed human waste from these pipes.



MAP OF POMPEII SHOWING PUBLIC AND PRIVATE TOILETS