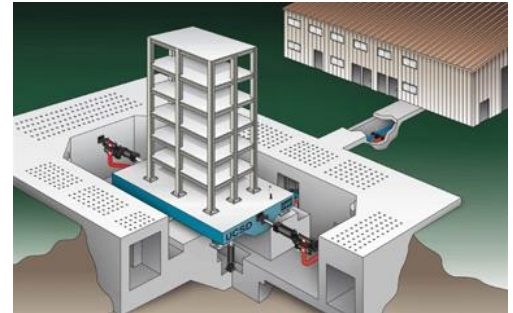




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### Earthquake Related Projects

1. Analysis of Seismic Demand in different structural members
2. Advanced Earthquake Resistant Techniques
3. Seismic isolation devices
4. Energy dissipation devices for seismic design
5. Reservoir induced seismicity
6. Failure of foundation due to earthquake
7. Cost Benefit Analysis of Earthquake Resistant Structures
8. Confined vs Brick Masonry Buildings
9. Seismic Behavior Analysis Of Different Structures (Buildings, Bridges, Shear Walls, Footing, Masonry)
10. Earthquake Vibration Control Using innovative techniques
11. Earthquake Vibration Control Using new / innovative materials
12. Increasing strength of buildings by introducing new materials in construction (bentonite, marble dust, rice husk)
13. Analysis of Building Codes
14. Innovative use of wood and steel in concrete / brick buildings
15. Landslide stabilization
16. Seismic vulnerability and risk assessment of existing buildings for a specific area (e.g. vulnerability and risk assessment of brick masonry buildings in Peshawar, Pakistan)
17. Critical evaluation of design methods in seismic zones
18. Numerical evaluation of the behavior of a reinforced concrete building
19. How to mainstream the earthquake resistant building design (socially, economically, technically)
20. Structural and Non-structural effects of earthquake
21. Probabilistic and deterministic seismic hazard analysis



### Surveying & Levelling

1. Advance Technology in Surveying
2. Development Of Remote Monitoring System For Civil Engineering
3. Determination of Road profile in an area

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4. Use of contouring to find suitable places for different purposes (e.g. dams, roads, buildings, powerplants, industries, reservoirs etc)
5. Use of GIS and remote sensing in surveying
6. Laser surveying, its applications, advancements, pros and cons
7. Applications of different surveying techniques for solving real world problems
8. Critical Analysis of already conducted surveys for different projects



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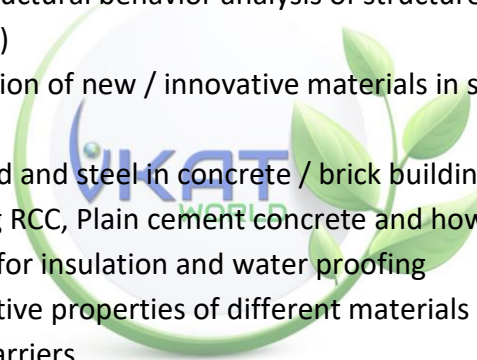
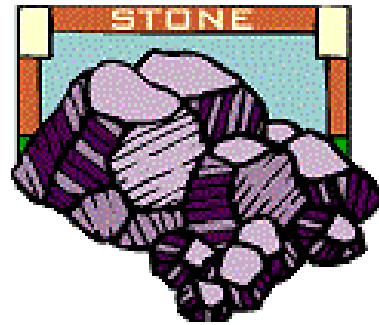




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## Engineering Materials

1. Smart materials
2. Basalt rock fibre (brf)
3. Cellular Lightweight Concrete
4. Mineral admixtures for high performance concrete
5. Glass fiber reinforced concrete
6. Geosynthetics
7. Bamboo as a building material
8. Silica fume concrete
9. Fly-ash concrete pavement
10. Non-destructive testing of concrete
11. Structural and Non-structural behavior analysis of structures (brick, concrete, stone, wood, steel structures)
12. Modelling and simulation of new / innovative materials in structural analysis softwares
13. Innovative use of wood and steel in concrete / brick buildings
14. Pros and Cons of using RCC, Plain cement concrete and how to fill the cons gaps
15. Use of local materials for insulation and water proofing
16. Investigation of Insulative properties of different materials
17. Materials for Sound Barriers
18. Development of Sustainable Materials



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## Building Construction

1. Causes Prevention and Repair of Cracks In Building
2. Rehabilitation techniques.
3. Stability of high rise buildings.
4. Corrosion Mechanism, Prevention & Repair Measures of RCC Structure
5. Analysis for seismic retrofitting of buildings
6. Collapse of World Trade Center
7. Advance construction techniques
8. The rain roof water-harvesting system
9. Formwork types & design
10. Rectification of building tilt
11. Space hotel
12. Retrofitting using frp laminates
13. Green buildings
14. Passive solar energy buildings
15. Zero energy buildings
16. Impact of lightening on building and remedial measures
17. Laminated floorings
18. Mainstreaming of green building technology/concept (socially, economically, technically)
19. Use of architectural features for incorporating green building concepts
20. Building Information Modelling



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### Highway & Transportation Engineering

1. Advanced Pavement Design
2. Intelligent transport system
3. Flexible pavement
4. Rural road development
5. Highway safety
6. Mixed traffic control & behavior continuously reinforced concrete pavement
7. Automated highway systems
8. Traffic volume studies and congestion solutions
9. Traffic Simulation and Modelling of specific areas
10. Analysis of traffic flows
11. Correlation of different factors on driver behavior and vehicle speed
12. Correlation of Level of Service on vehicle speed



### Environmental Engineering

1. Sewage treatment plant
2. Air pollution & its control
3. Marine pollution
4. Logistic management of solid waste
5. E – waste disposal
6. Environmental Impact Assessment



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### Softwares And Computer applications

1. Computer Application In Civil Engineering-ANN
2. GIS, GPS and its applications
3. Arsenic Removal From Ground Water By Coagulation Process  
Concrete Cube Testing - A Neural Network Approach, Using  
MATLAB 6.0
4. Geometry Optimization of Space Frame Structures
5. Application of remote sensing & g.i.s. in groundwater prospecting
6. Application of software in civil engineering industry



### Irrigation & Water Resources Engineering

1. Watershed management
2. Water resources engineering
3. Interlinking of rivers
4. Hydraulic & Hydrological impacts on Bridges



### Soil Mechanics & GeoTechnical Engineering

1. Soil Liquefaction
2. Ready mix concrete plants
3. Pile foundation
4. Improvement of bearing capacity of sandy soil by  
grouting
5. Ground improvement technique
6. Use of plastic as soil stabilizer
7. Erosion control in slope



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