Granular Pile Anchor (GPA) is one of the innovative foundation techniques, devised for mitigating heave of footing placed in expansive soil. This study presents the heave behavior of Granular Pile Anchor-Foundation (GPA-Foundation) System as a function of the above mentioned three independent variables with coefficient of regression of $(R^2 = 92.3\%)$.

**Keywords:** Expansive Soil; Sand; Heave; Granular Pile Anchor (GPA); Foundation; PLAXIS
Probabilistic Response Evaluation of Plan-Irregular Buildings Subjected to Bi-directional Seismic Loading

Original Article, D34
Manie S, Moghadam AS, Ghafory-Ashtiany M.

ABSTRACT: The present paper aims at evaluating the response of three-dimensional buildings with in-plan unidirectional mass distribution. The focus is on torsional buildings, as an alternative to conventional fragility curves for collapse behavior assessment of three-dimensional structures.

Keywords: Torsional Buildings, Probabilistic, Collapse, Plan Irregularity, Low-Rise Buildings
ABSTRACT: The ecosystem of Urmia Lake is almost close ended and the water of rains and
Keywords: Urmia Lake, Ecosystem, Sewage, Heavy Metals, Artemia, Environment.
Structural Identification of Bridges (Case Study: Mazandaran, Iran)

ABSTRACT: Throughout more thousand years of human civilization, bridge and bridge architecture had indicated the creativity, artistry, and engineering intelligence of different human societies. A bridge is a combination of structures which are influenced by river bed, ground strength and amount of water across it.

Keywords: Bridge Architecture, Design Method, Material Type, Constructing Technique, Nature...
Estimations of Sediments in Mahabad Dam Using Artificial Neural Networks and Comparing the Results with Hydrometer Approach

ABSTRACT: A deposition phenomenon is considered as one of the hydrometer processes which have ability to influence the most of the hydrometer processes. The authors used Artificial Neural Networks to predict the sediments and compared the results with the hydrometer method. They point out that the multi-layer networks in prognosticating a measure of the sediments is superior to the hydrometer method.

Keywords: Artificial Neural Network, Hydrometer Method, Nero solution, Sediments.

Usage Alteration of the Nazlu-Chay River of Iran due to Excessive Exploit of Its Material Includes Sand and Gravel in the Lake Urmia Catchment
**ABSTRACT:** From Ancient times rivers were so essential for human beings and they had a major role in the formation of societies and their development. Some direct influence of exploits includes: river hydraulic alteration, sediment place and river scope morphology.

**Keywords:** Environmental on sequences, River ecology, Sand and Gravel exploit

**ABSTRACT:** The development of transportation in the large cities needs some new tunnels to be designed and constructed nearby. In this paper, the cases of the interaction of the existing support system are modeled using the Finite element method. The results confirm that the longitudinal section is the most affected section of the tunnel. The internal forces variations in the longitudinal section of sewage tunnel are more than circumferential ones.

**Keywords:** EPB Shield, 3D Numerical Modeling, Tunnel Interaction

**ABSTRACT:** Landfill is one of the oldest and most widely used methods of waste management. Due to the special geographical and topographical characteristics of the area, the location of the landfill is very important. In the present study, the best location for Babol landfill is investigated using the Fuzzy logic method. The method of the weight of the criteria in the location selection was used. The option that has the best condition according to the weight was given as the final location of the landfill.

**Keywords:** Solid waste management, Site, Babol, Boolean logic Method, Kardijkola

**ABSTRACT:** Urbanization and urban development builds large amounts of impervious areas, stopping the infiltrating of rainfall into the ground. Stormwater management needs to be considered because of the increased imperviousness and the different runoff characteristics. MUSIC (Multiple Utility Stream Channel), a simulation-optimization tool, was used in this study to minimize and optimize urban stormwater management measures. The Genetic algorithm (GA) was used as the optimization algorithm. The results of different runs indicated that there is a proper convergence of MUSIC-GA results toward the global optimal solution.

**Keywords:** Urban stormwater, Water sensitive urban design, MUSIC, Constructed wetland, Genetic algorithm

**ABSTRACT:** The stability of the spillway gable roof of Nazlu Dam was evaluated using the Slide software. The results of the analysis showed that the stability of the spillway gable roof of Nazlu Dam is acceptable.
ABSTRACT:
The most prominent issue in the civil projects such as construction of dams is providing stable steeps of rocks and ... instead the desired steep will be provided and those lifted material will be used in the body construction of the dam.

Keywords:
Limit Equilibrium Methods, Nazlu Dam, RDQ Index, Stability of Slope

ABSTRACT:
The transient pressure caused by water hammer events is sufficient to fracture pipes and some equipment, and for this ... pressure fluctuation it is advisable to choose pipes with most similar elastic modulus and one greater diameter size.

Keywords:
Elastic modulus, Pipe line, Transient pressure, Water hammer

ABSTRACT:
Pre settled pools were most important elements in water purification process. Because of enormous cost of making these ... laboratory results as well as capacity of this model to predict distribution of sediment profiles in pre settled pools.

Keywords:
Pre Settled Pools, Profile of Flow Velocity, Distribution of Sediment Concentration

ABSTRACT:
The chaotic behavior of monthly precipitation time series is investigated using the phase-space reconstruction technique ... value of correlation in daily scale is an indication of the existence of chaos in the water flow of Baranduz Chay River.

Keywords:
Baranduz Chay River, Chaos Theory, Correlation Dimension, Delay Time

ABSTRACT:
Criteria of Passive Defense in Subway Stations

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ABSTRACT:
Defense is an integrated concept, which includes both active and passive defenses. The effects of the war include heavy losses of citizens and damage to cities; thus, the citizens’ security will increase, and the defensive power and national security will enhance subsequently.

Keywords: The Subway, Designing, Passive Defense, Threat, Architecture.

ABSTRACT:
Studying a society’s population changes is important for any planning. Since all eco-social planning are designed due to the changes in population, it is necessary to forecast the changes so that employers’ ratio has and will have declined, which is why the percentage of unemployed people have a high trend.

Keywords: Population Change; Planning; Statistics; Population Structure; Ardabil City

ABSTRACT:
Effluent generally includes nutrient elements like nitrogen and phosphorus. Its discharge to water resources leads to an increase in the growth of different types of algae; hence it is necessary to decrease the amount of phosphorus and nitrogen as much as possible before discharging of treated wastewater. The results showed that the removal of nitrate was 96.60 and 96.19 percent respectively and average reduction of nitrate and phosphate were 81.43, 92.66 and 83.66, 74.26 percent respectively.

Keywords: Nitrate, Phosphate, Phragmites australis, Typha latifolia, channel, Wastewater.

ABSTRACT:
At present, water waste has become a global concern. On the other hand, the amount of sweet water on the earth is fixed; therefore, it is necessary to use water resources efficiently. The results showed that the model is efficient and effective when several simultaneous leakages have occurred, and the accuracy of the model is verified by the results.

Keywords: Leakage Detection, Barometers Placement, Neural Network, Bat Algorithm.
ABSTRACT: The unorganized status of housing in all around the world was driving force of emphasizing on "adequate housing right" as the basic needs of human rights. The purpose of this study is to investigate the housing conditions, physical indexes and human rights, in the context of shelter. Using the IRB and the extent of their competence in accordance with the housing indicators.

Keywords: Housing, Physical Indexes, Human Rights, Shelter.

ABSTRACT: Nowadays cities benefit from geographical (natural, social, and economical) and artificial (man-made) components and about thirteen million people live in this city. Green roofs are a good means for reducing these problems of Tehran.

Keywords: Green Roof, Roof Garden, Drain, Artificial Filter, Damp-Proof Coarse.

ABSTRACT: Tamin Village has a special place of importance in the villages of Zahedan situated in the southeast of Iran. In this research, in the optimization of the location and completion of the important points of Tamin, not only the destruction of the environment is reduced but also the environmental and economic aspects have been completed.

Keywords: Tamin Village, Dast Kand Architecture, Completion Nature.

ABSTRACT: Tall buildings are defined as signs and certain points in urban view, if located and constructed properly, and their evaluation can be considered in determining its policies and strategies should be prioritized to tall buildings which shapes an optimal urban view.

Keywords: High-rise Buildings, Urban Landscapes, Impressive Indicators, ANP.