iN Situ

Constructive Tidings from Nuvoco Vistas Corp. Ltd.

ISSUE: 07 DECEMBER, 2019

Dear Friends,

Heartiest greetings from NUVOCO VISTAS CORP LTD.

We are overwhelmed with your feedbacks, suggestions and requests. After due examination of those, we found a lot of advanced queries about midrise building foundations. After discussing backfilling in the October issue, instead of going forward, we preferred to discuss midrise building foundations, to honouring several requests..

Hope you shall enjoy reading. Keep giving your valuable feedback and suggestions for further improvement. We would like to extend our sincere thanks and gratitude to the readers who have already advised, enriched and encouraged us with their valuable advice.

Happy reading, keep well, keep safe.

Foundations for Midrise Residential Buildings

Generally the following types of foundations are adopted by different engineers, depending upon the various soil / site conditions vis-à-vis the dimension of the buildings and other factors :-

1) **Combined and Strap footing** – combining 2-3 or more column footings.

   a) When the columns are very closely spaced, so that their **footings** overlap.

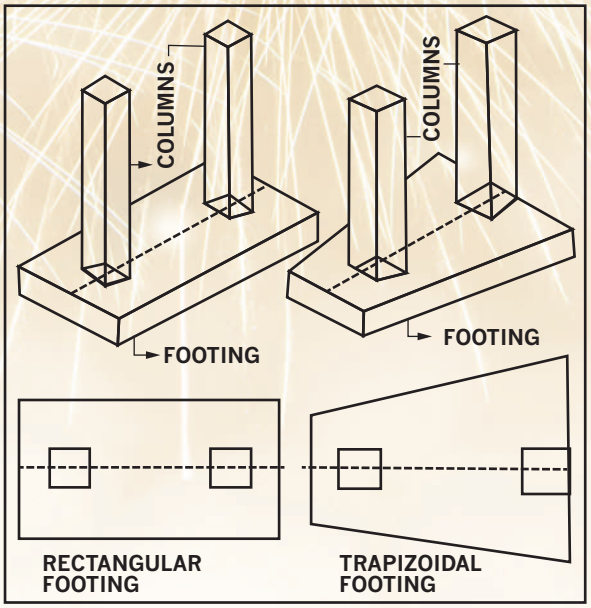
   b) When the safe bearing capacity of any soil is less and more area under individual **footing is required.**

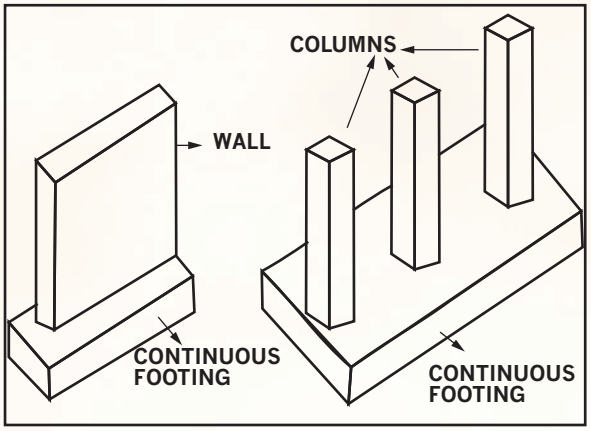
   c) When the end column is near a property line so that its footing cannot spread in that direction ...

   d) **Strap footings** are the **footings** which connect two columns by a trap beams and if we connect more than two columns it's called continuous **footing.**

2) **Raft foundation** – A raft foundation or a mat foundation, is a continuous slab resting on the soil that extends over the entire built up area of the building, thereby supporting the building and transferring its weight uniformly to the foundation soil.

   A raft foundation is often used when the soil is weak, as it distributes the weight of the structure over the entire area of the building, and not over smaller zones (isolated footings) or at individual points (pile foundations). This reduces the stress on the soil significantly.





To be continued...

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Value Added Products – The Differentiator in Building Materials Industry

...continued from last issue

Another important innovation in the construction sector, high performance con- crete, extensively used in the construction of complex buildings and infrastructure pro- jects. The concrete is developed keeping in mind the complexities of cement, binder, aggregates, water, admixture, and other materials, so as to meet the specific needs and requirements of the structure being developed. At present we are pumping C95/M120 Self Compacting Concrete with minimal creeping and shrinkage to the 100th floor of a premium property in Lower Parel (Mumbai), as well as supplying M50 high early strength concrete for tunnel seg- ments of the upcoming Mumbai Metro with a corrosion free life of up to 150 years.

For many years, architects and structural engineers have demanded the best construction materials, which has led to out of the box thinking and development of complex design tools. As a result self- compacting, leveling and placing concrete has been specially developed to make con- struction easy, fast and less labour skill dependent. Designed to help engineers and architects build unconventional and innovative buildings and projects, this is ideal for both vertical and horizontal ele- ments, and offers exceptional aesthetically pleasing finishes. Due to its fluidity and excellent consistency, this concrete was used in Nazrul Tirtha, Kolkata to transform the architectural design into a landmark pro- ject. The main gate has 8.5 meter high block of concrete, elevated on stilts, with Bengali letters 'Unnata mama shir' carved on it which means head held high. The letters in Bengali have sharp ends and curves unlike the English letters which also bring unique challenges for letter embossing. Self- leveling concrete provides solutions and opportunities for design and placement. A fluid concrete that flows freely around con- gested steel reinforcement. Due to its fluid- ity, it eliminates the tedious chore of vibra- tion. Thereby reducing work site noise lev- els.

To tackle the problem of storage and transportation of concrete, a ready-to-use wet concrete in 35 kg bags. Developed by utilizing cutting edge innovation in mate- rial chemistry and rheology study, it guar- antees quality assurance and sustainable construction in the space of affordable housing, small repair work, and big con- struction sites where a low volume of con- crete is required. It is premixed; hence no wastage of cement, sand, aggregates and water at job site. Since it comes in bags and is premixed it easier to transport and use hence was the obvious choice for restora- tion of Mumbai's oldest landmarks Elephanta Caves.

To be continued...

Corporate & Registered Office: Nuvoco Vistas Corp. Ltd.
Equinox Business Park, Tower-3, East Wing, 4th floor, LBS Road, Kurla-West, Mumbai - 400070.

Write-up contributed by panel of experts from our Construction Development & Innovation Centre, Mumbai.
For technical assistance, do call our Toll Free No.: 1800 345 6666 | Whatsapp 'NUVOCO' to 98300 17272