

**Cost effective reinforced concrete slabs and rafters for houses**

A cost evaluation mainly focused on cost savings of new pre-cast concrete slabs and concrete pre-cast rafters are presented. Pre-cast concrete joists and planks, pre-cast concrete inverted T shape beams and hollow block are potential feasible new slab systems. These new methods can save the construction cost in the range of 25% to 35% compared to slabs in practice and 15% to 25% compared to optimum reinforced concrete slabs. Pre-cast concrete joist and planks and pre-cast concrete inverted T shape beams and hollow block slabs. Pre-cast concrete joist and planks and pre-cast concrete inverted T shape beams and hollow block slabs are the best two types of slabs in houses considering the cost savings and technical feasibility. Cost effective reinforced concrete rafters can be manufactured using simple reinforcement arrangements and can save the cost 7% to 28% by direct substitution for timber rafters. There is further reduction in the requirement of structural timber such as intermediate beams and main beams with reinforced concrete rafters. Therefore when the total structural timber requirement is considered reinforced concrete rafters could save 35% to 63% of the total cost of timber of the roof.