

निर्माण प्रबंधन (Construction Management) के सिद्धांत  
[Nirman prabandhan (Construction Management) ke Siddhant]

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Lecture – 32

Anubandhon ke Prakaar



भारत सरकार की MOOCS पहल के अंतर्गत पाठ्यक्रम

निर्माण प्रबंधन के सिद्धांत  
Principles of Construction Management

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भारत सरकार की MOOCS पहल के अंतर्गत पाठ्यक्रम

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Namaskaar! Main chirag kothari aapaka svaagat karata hoon bhara sarakaar kee MOOCS pahal ke antargat paathyakram “Nirmaan Prabandhan ke Siddhaant” mein.

(Reference Time 00:23)



लेक्चर - 32

निर्माण अनुबंधों के प्रकार  
Types of Construction Contracts

Aaj ka lecture rahega Nirmaan Anubandhon ke Prakaar par.

(Reference Time 00:26)



पाठ्यक्रम के गोंदयूल

- परिचय एवं विषयवस्तु
- परिचय की लक्षण का अनुभव
- निर्माण अनुबंध
- पारंपरिक एवं आधुनिक
- गुणवत्ता प्रबंधन
- अनुबंध प्रबंधन
- सुरक्षा प्रबंधन एवं समापन

Yah hamaare pichhale lecture mein kee gae charcha ka ek bhaag hai. Jahaan abhee tak hamane dekha ek anubandh ya contract kya hota hai. Phir hamane dekha tha ki ek achchhe contract ya ek achchhe anubandh mein kya hona chaahie. Aaj isee charcha ko ham aage badhaenge aur dekhenge ki nirmaan kaaryon mein jo anubandh prayog mein laaye jaate hain unake kya prakaar hain (types of construction contracts)?

(Reference Time 00:55)



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### निर्माण अनुबंधों के प्रकार Types of Construction Contracts



भारत सरकार की सहायता से तैयार किया गया है। निर्माण अनुबंधों के प्रकार

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Moolatah anubandh agar ham chaahen to unhen do prakaar mein baant sakate hain; sabase pahala - separated anubandh jahaan par lumpsum, cost plus ya item rate contract rahate hain. Aur doosara integrated anubandh ya ekeekrt anubandh, jahaan design belt turnkey ya build operate transfer jaise contracts rahate hain. Aaj ke lecture kee pooree charcha inheen vibhinn prakaar ke contracts par rahegee. Aaiye ham charcha ko shuroo karate hain aur sabase pahale dekhate hain ek separated contract kya hota hai?

(Reference Time 01:33)



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### सेपरेटेड अनुबंध Separated Contract

डिजाइन चरण (design phase) और निर्माण चरण (construction phase) के लिए अलग-अलग इकाइयाँ

इसे डिजाइन बिड बिल्ड (डीबीबी) (Design Bid Build) अनुबंध के रूप में भी जाना जाता है



लाभ (Advantages):

- डिजाइन पेशेवरों की विस्तृत श्रृंखला (wide range) में से चुनने का विकल्प
- कार्य की निगरानी के लिए स्वतंत्र पेशेवरों (independent professional) को शामिल करने का मौका
- डिजाइन-निर्माण के लिए विशेष एजेंसियाँ (specialized agencies) का उपयोग

भारत सरकार की सहायता से तैयार किया गया है। निर्माण अनुबंधों के प्रकार

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Separated contract, yahaan par jo hamaare nirmaan kaary ka design charan hai aur jo nirmaan charan hai, design phase aur jo construction phase hai vah alag-alag ikaiyaan karatee hain. Isase design bid build bhee kaha jaata hai. Isee lie ise ham ek baar samajhate hain. Maan leejie koee nirmaan kaary kiya jaana hai. Generally vah kuchh is prakaar dikhata hai, sabase

pahale ek pariyojana kee shuruat hotee hai project initiation hota hai. Phir ham design charan kee or jaate hain, design charan ke baad design ka approval hota hai, phir nirmaan hetu tender hota hai aur phir nirmaan hota hai. Jab ham separated contract kee baat kar rahe hain, to jo ikaae design karegee vah alag hotee hai aur design ke approval ke baad jo ikaae construction karegee ya nirmaan karegee vah ikaae alag hotee hai. Kisee bhee kaary ke lie agar design phase aur construction phase alag-alag ikaiyaan kar rahee hain to unhen ham separated contract kahate hain. Udaaharan ke taur par maan leejie aap ek ghar bana rahe hain aur aapane architect aur designer kee madad se ek pooree design bana lee hai, ab aap vah designs ko lekar market mein jaate hain aur ek thekedaar dhoondhate hain jo un design ke aadhaar par aapaka ghar bana sake. Vah thekedaar ek alag ikaae agar hai to yah separated contract hoga aur iseelie ise ham design bid build kah rahe hain. Jahaan pahale design huee phir un design ke aadhaar par bidding huee (bid hua) aur phir usaka nirmaan hua. Isake kuchh laabh hain. Sabase pahala laabh hai design peshavaaron kee ek wide range hamaare paas rahatee hai aur ham unamen se koe vikalp le sakate hain. Saath hee saath jo kaary ho raha hai use ek independent professional (svatantr peshavar), saath hee saath kaaryon kee nigaraanee ke lie ek independent professional ko shaamil kiya jaana aasaan ho jaata hai. Aur yah bhee aasaan ho jaata hai ki ham design aur nirmaan donon ke lie kuchh vishesh agencies ya specialized agencies ka upayog karen. Yahaan par lekin jo ek kathin baat hotee hai vah yah hotee hai ki hamen jo bhee hamaaree ikaae design bana rahee hai unake beech aur jo construction kar rahee hai unake beech coordination ka dhyaan rakhana padata hai.

(Reference Time 04:16)

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**सेपरेटेड अनुबंध - लम्पसम  
Separated Contracts - Lumpsum**

इसे निश्चित मूल्य अनुबंध (fixed price contract) भी कहा जाता है

समस्त निर्माण के लिए एकमुश्त राशि (lumpsum) का भुगतान किया जाता है

मालिक Owner	ठेकेदार Contractor
<p><b>लाभ (Advantage):</b> सटीक मात्रा (exact amount) ज्ञात है रिकॉर्ड रखने की कोई आवश्यकता नहीं</p> <p><b>हानि (Disadvantage):</b> अधिक भुगतान करना पड़ सकता है</p>	<p><b>लाभ (Advantage):</b> लागत रिकॉर्ड साझा करने की कोई आवश्यकता नहीं है</p> <p><b>हानि (Disadvantages):</b> सभी प्रदर्शन बोखिम ठेकेदार को वहन करने होते हैं; उदाहरण - कार्यस्थलों की भिन्न स्थितियाँ (differing site conditions), मौसम की परिस्थितियाँ (weather conditions)</p>

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Ab aaiye ham dekhate hain ki separated contract kitane prakaar ke ho sakate hain. Separated contract ke prakaar yahaan par is lecture mein kuchh is prakaar dikhae gae hain ki bataaya gaya hai ki is anubandh ka kaary karane ke lie jo payment hai, jo paisa diya jaana hai vah kis prakaar diya jaata hai.

Sabase pahale hai lumpsum contract. Lumpsum contract ko ek nishchit mooly anubandh fixed price contract bhee kaha jaata hai. Yahaan par samast nirmaan kaary karane ke lie ek lumpsum bhugataan kiya jaata hai. To maan leejie aapako ghar banaana hai to aapane ek

thekedaar ko kaha ki in designs aur in drawings ke anusaar ghar banega isake lie aap kitana paisa lenge vah bata deejie aur ek lumpsum payment karenge, ek total payment karenge. Is lumpsum contract ko agar maalik ke najariya se dekhien, to ek bahut hee mukhy laabh hai, jo hai ek sateek maatra ya exact amount pahale se gyaat hota hai. Hamen pata hota hai ki yah kaary karane ke lie kitana paisa lagega aur ham vah paisa poora bhar sakate hain. Kisee bhee prakaar kee record rakhane kee aavashyakata nahin hotee hai, lekin yahaan par jo ek disadvantage hai ya haani hai vah yah hai ki kae baar aisa hota hai ki hamen adhik bhugataan karana pad sakata hai. Vah isalie kyonki jab ham kisee bhee thekedaar se kahate hain ki aap in designs ko dekhakar isake anusaar ghar bana deejie, to jo bhee jokhim hote hain ya risks hote hain vah sab thekedaar ke oopar aa jaate hain aur iseelie vah koshish karata hai ki vah jo bhee raashi hamase maange usamen kuchh extra percentage in risk ya jokhimon ko uthaane ke lie rakhen. To vah adhikatar hamase thoda sa jyaada paisa maangata hai. Ab maan leejie ki us project ya use nirmaan kaary mein vah risk aanee hee nahin hai vah risk hamane initially sochee thee ki ho sakatee hai lekin vah risk nahin aatee hai phir bhee hamen ek adhik bhugataan karana padata hai, to yah ek disadvantage hai. Ab isee ko ham ek thekedaar ke pahaloo se dekhien. Thekedaar ke lie bhee laabh yahee hai ki use kisee bhee tarah ka record saajha nahin karana hota hai. Aisee koe aavashyakata nahin hotee hai ki vah bataen ki usane kitana kaary kahaan-kahaan par ya kaise kiya ya use har kaary ko karane mein kitana munaapha hua. Use bas ek lumpsum payment milata hai. Use kisee bhee prakaar ka record share karane kee jaroorat nahin hotee hai. Ummeed karata hoon abhee tak aap samajh gae hongee ki thekedaar ke pahaloo se isake disadvantage kya hai. Sabase mukhy disadvantage hai, pradarshan kee pooree jimmedaaree thekedaar par aa jaatee hai agar koe bhee paristhiti badalatee hai, jaise maan leejie jis kaary sthal par kaam hona hai usakee sthitiyaan badal jae, site conditions differ kar rahee hoon jo hamane pahale socha tha usase ya phir maan leejie mausam kee paristhitiyaan badal jae ya phir aur bhee any kisee bhee tarah kee paristhiti mein agar badalaav aata hai to yah thekedaar kee jimmedaaree ho jaatee hai ki vah usaka dhyaan rakhen aur ise paar aae. Lekin isake lie maalik ko kuchh bhee extra nahin pay karana padata hai, kisee bhee prakaar ka extra payment nahee rahata hai.

(Reference Time 08:03)




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सेपरेटेड अनुबंध - वस्तु दर  
Separated Contracts - Item Rate

इसे इकाई मूल्य निर्धारण (unit pricing) अनुबंध भी कहा जाता है

प्रत्येक वस्तु/गतिविधि की दर निर्धारित कर दी जाती है। बिल माग के आधार पर बनाया जाता है




**मालिक**  
Owner

**लाभ (Advantage) :** ठेकेदार को वास्तविक मात्रा (actual quantity) के लिए ही भुगतान किया जाएगा

**हानि (Disadvantage):** कुल लागत अनुमान से अधिक हो सकती है।

फ्रंट-एंड लोडिंग का मुद्दा (Issue of front-end loading)

**ठेकेदार**  
Contractor



**लाभ (Advantage) :** लंपसम अनुबंधों (lumpsum contract) की तुलना में कम जोखिम भरा।

**हानि (Disadvantage):** निष्पादित किए गए कार्य की मात्रा में भिन्नता के कारण समस्याएं (Issues due to the variation in the quantity of work performed)

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Ab ham chalte hain doosare type ke contract pe jo hai vastu dar contract ya item rate contract. Abhee tak hamane baat kee lumpsum contract kee jahaan par ek total payment ho raha hai. Lumpsum contract jab achchha hota hai, jab hamaaree design aur hamaaree architecture details poorn tarah se pooree ho chukee ho aur hamen pata ho ki exactly kya kaary hamen karana hai aur vah kaise-kaise hoga. Kyonki agar ham poorn specifications de pa rahe hain to ham ummeed kar sakate hain ki thekedar vah guidelines aur specifications ko dekhega aur poora kaary karega aur vah pahale hee dekh paega ki use vah kaary karane mein kitana kharcha hoga. Lumpsum contract se alag jo vastu dar contract hota hai use unit pricing kaha jaata hai jahaan par har ikaee ya har gatividhi ka mooly nirdhaarit kar diya jaata hai aur phir yah dekha jaata hai ki har gatividhi ya vastu ka kaary kitana hua hai, usakee dar kitanee thee aur usee ke aadhaar par payment kiya jaata hai. To maan leejie aap ek ghar bana rahe hain. Ab usamen maan leejie paanch gatividhiyaan aane vaalee hai: pahalee gatividhi huee excavation kee ya gaddha khodane kee. To ab aap kah rahe hain ki ham excavation ka kaary karane ke lie aapako maan leejie 400 rupaye par cubic meter denge. Ab jitana bhee cubic meter kaam hoga, maan leejie vah hajaar cubic meter kaam hota hai. To hajaar cubic meter ko aap jo bhee hamaara khudaae karane ka rate pahale se final hua tha 400, use multiply karengae aur total amount denge. To is prakaar unit rate mein har gatividhi jo bhee kaary mein aane vaalee hai unakee ek rate ya unaka ek mooly pahale se fix kar diya jaata hai lekin jo quantity hotee hai ya jo maatra kitanee maatra mein vah kaam hona hai vah pahale se fix nahin hota hai. Jitana-jitana kaam hota jaata hai aur jitana kaary poorn hota hai us hisaab se payment hota hai. Agar aap maalik ke najariye se dekhenge, to isaka phaayada hai ki thekedar ko jo bhee vaastavik maatra hai (actual quantity of work) hai usake hisaab se bhugataan hota hai. Maan leejie kisee kaaran se design nirmaan kaary shuroo hone ke baad change hotee hai, maan leejie kuchh kaam extra karana padata hai, ho sakata hai kuchh gatividhiyaan nahin karanee pad rahee hoon. To in sab kaaranon se jo bhee change ya variation aega usaka payment bhee usee hisaab se adjust kar diya jaega jo vaastavik kaam hoga sirph utana hee bhugataan kiya jaega. Isaka jo ek disadvantage ya haani hai vah yah hai ki maalik ko yah nahin pata hota hai kee kul laagat ya anumaan kitana hoga aur kabhee-kabhee ho sakata hai ki anumaan se adhik bhee payment karana pade ek aur jo problam isake saath aatee hai front end loading ka jo mudda hai yah ek bahut hee mahatvapoom mudda hai. Agar main aapase kahoon ki aapake paas do thekedaron ne ek tender diya hai jisaka margin same hai. Maan leejie donon mein unhen total project ka sirph 10 percentage margin profit hee ho raha hai phir bhee main kahoon ki ek particular thekedar ko jyaada phaayada ho raha hai aur doosare ko kam ho raha hai to sochie yah kaise ho sakata hai? Yah possible hai front end loading ke kaaran. Front end loading mein yah hota hai ki aisee jo gatividhiyaan hai jo nirmaan kaary kee shuruuat mein aane vaalee hai, thekedar unamen jyaada profit rakhate hain ya (jyaada munaapha) rakh lete hain aur jo gatividhiyaan baad mein aane vaalee hai unamen kam munaapha rakhate hain. Isase hota yah hai ki jo kaary pahale hona tha jab vah kaary poorn ho jaata hai to maalik ko paisa dena hota hai aur maalik jyaada paisa shuruuat mein deta hai aur jo kaary baad mein hona hai jisamen munaapha kam hai vah thekedar baad mein karata hai aur us time par payment kam bacha hota hai ab aap sochie agar kisee thekedar ko jyaada raashi shuruuat mein mil rahee hai aur baad mein kam raashi mil rahee hai aur vaheen ek doosara thekedar hai jise jyaada raashi baad mein mil rahee hai aur kam raashi pahale mil rahee hai to phaayada kisaka hoga. Phaayada us thekedar ka hoga jise jyaada paisa shuruuat mein mil raha hai. Agar ham inflation ka dhyaan rakhen to jo paisa hamen aaj mil raha hai usaka mooly jo paisa saal bhar baad milega usase jyaada hai iseelie kabhee kabhaar yah ek disadvantage ho jaata hai item rate ya vastu dar contract ka. Agar ham

ise thekedar ke pahaloo se dekhen to lumpsum anubandh ya lumpsum contract kee tulana mein yah kam jokhim bhara hota hai.

Isakee haani ya disadvantage yah hai ki nishpaadit kaary kee jo maatra hai usamen bhinnata ho sakatee hai aur us bhinnata ke kaaran jo thekedar hai use disadvantage ho sakatee hai. Udaaharan se agar sajhien to maan leejie kee shuruuat mein thekedar ko yah pata tha ki unhen maan leejie hazaar cubic meter ka concrete karana hai unhone jo rate diya hoga concreting karane ke lie usamen unhone dekha hoga ki majadoor (labor) padaarth (material) aur plant and machinery, jo machines use hone vaalee hain usake lie unaka kitana kharcha hoga unhone kul kharch nikaala hoga aur use divid kiya hoga hazaar cubic meter se aur bataaya hoga ki haan main itane rupee par cubic meter mein concreting ka kaary karoonga. Ab maan leejie kisee kaaran se concreting bahut kam maatra mein hogee. Design badal gae hain pahale jitane concreting kee jaroorat thee ab utanee jarurat nahin hai. Ab concrete kee quantity maan leejie bahut kam ho gae hai. Lekin ho sakata hai thekedar ko masheen to phir bhee laana pade vyakti jo unhone bula rakhe hain vah bhee rahen aur unaka kharcha badh jae, to usake yah hoga ki jo unhone initially rate diya tha pahale jo rate diya tha ab vah thekedar us rate par kaam nahin kar paenge. To yah ek disadvantage hota hai unit rate contract ka agar jo kaary kee maatra hai agar usamen bahut jyaada parivartan aata hai to kaheen baar rate ko phir se readjust karana padata hai ya phir se nae rate decide karane padate hain.

(Reference Time 14:50)

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Indian Institute of Technology Kanpur**

**सेपरेटड अनुबंध लागत आधिक्य %  
Separated Contracts - Cost Plus %**

इसे लागत अनुबंध (cost contracts) भी कहा जाता है

ठेकेदार को कुल लागत का % मार्कअप (% markup) भुगतान किया जाता है

**मालिक  
Owner**

**लाभ (Advantage):** अनुमान लगाने/निविदा (estimating/tendering) करने में कम समय बचाव होगा

**हानि (Disadvantage):** अतिरिक्त प्रशासनिक लागत; (administrative costs);  
निष्पत्ता (efficiency) के लिए कोई प्रोत्साहन राशि नहीं

**ठेकेदार  
Contractor**

**लाभ (Advantage):** नुकसान रोकता है (prevents loss); अनिश्चित परिस्थितियों के लिए बेहतर रहता है (works best for uncertain conditions)

**हानि (Disadvantages):** अधिकतम लाभ (maximum profit) पर सीमा रहती है (maximum cap)

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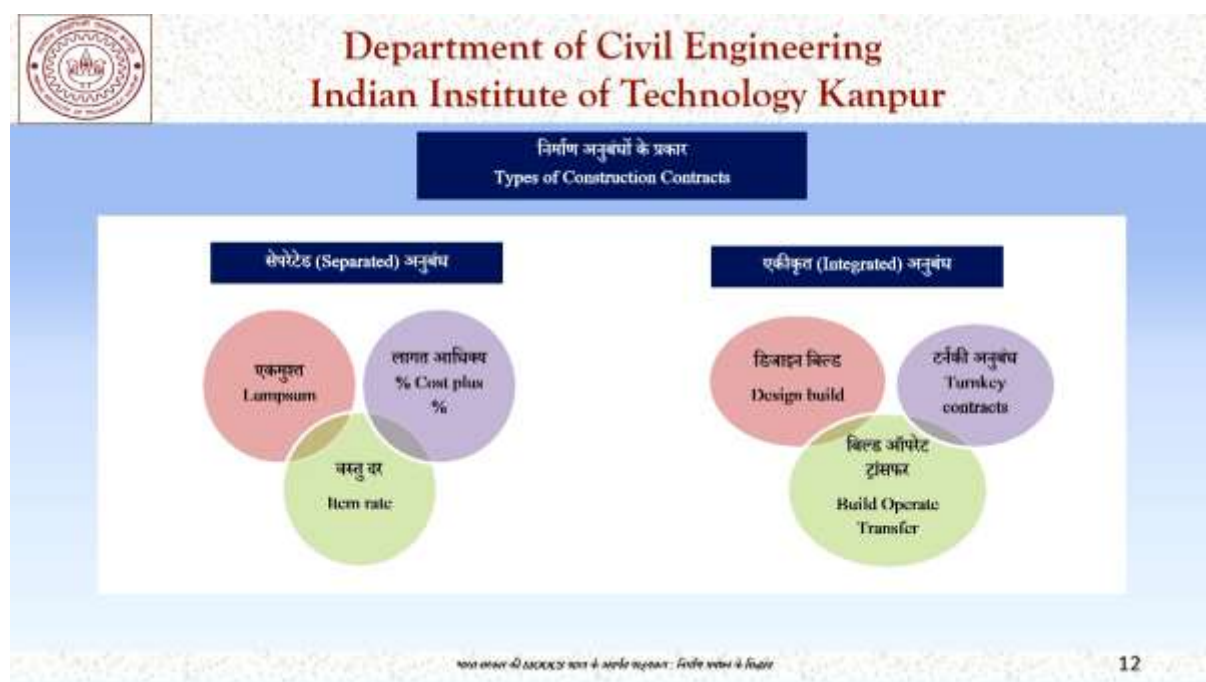
Chalie ab ham teesare prakaar ke contract par chalate hain jo hai cost plus percentageej contract (laagat aadhiky contract). Ise laagat anubandh bhee kaha ja sakata hai. Yahaan par thekedar ko kul laagat ke oopar ek percentageej mark-up diya jaata hai. Isamen kaha jaata hai ki jo bhee kaary kiya jaega usakee jo bhee laagat aatee hai maan leejie 100 rupaye kisee cheej kee laagat aatee hai to usake oopar ek fixed percentageej thekedar ko milega. Maan leejie vah percentageej 10% hai to 100 ke oopar 10 percentage extra 10 rupaye jo hain vah thekedar ko milenge. To is prakaar ke contract mein yah kaha jaata hai ki aap poora kaary kariye jo-jo aapaka kharcha ho vah kharcha aap likhate jaiye aur usaka aap documentation

kariye. Ant mein dekha jaega ki kitana kaary hua hai usakee kitanee laagat aae hai aur us laagat par ek percentageej mark-up jo pahale hee nirdhaarit kiya jaata hai vah diya jaata hai.

Aaiye isake ham phaayade dekhate hain. Isaka phaayada yah hota hai ki jo bhee anumaan lagaana hota hai estimation ya tendering hotee hai usamen kam samay barbaad hota hai. To agar aisa koe kaary hai jahaan par jab kaary shuroo ho raha hai hamen pata nahin hai ki kitana kaary hone vaala hai. Hamen is baare mein jaanakaaree nahin hai ki har gatividhi jo project par hogee usakee quantity kitanee rahane vaalee hai, kitanee maatra mein kaam hone vaala hai. To ham kuchh is prakaar ka cost plus contract le sakate hain.

Ab ham dekhate hain disadvantageij kya hai ya haani kya hai? Sabase mukhy haani ya disadvantage hai administrative cost aapako har baar dhyaan rakhana padata hai ki kitane aadamee kaam karane aae, kitana saamaan aaya, kitana usakee laagat kya thee, total cost kya thee in har cheejon ka dhyaan rakhana padata hai jis kaaran se administrative cost badh jaatee hai. Saath hee saath jo hamaara thekedaar hai usake paas koee protsaahan nahin hota hai ki vah efficiently kam kare (nipunata se kam kare) kyonki use paisa is anusaar mil raha hai ki kitana kharcha hoga jitana jyaada kharch hoga utana jyaada usaka phaayada hoga. Iseelie jo thekedaar hai unaka kabhee-kabhee koshish rah sakata hai ki vah jyaada time lagaayen aur utana efficiently kaam nahin karen taaki unhen jyaada paisa mil sake yah ek mukhy disadvantage hai. Isee ko agar ham thekedaar ke pahaloo se dekhen to mukhy laabh hai ki kisee bhee prakaar ka nukasaan ruk jaata hai kyonki jo bhee kaary aega us kaary mein jo laagat aaegee use par ek fix munaapha milega to koee nukasaan nahin hota hai aur yah bahut upayogee hota hai un projects par jahaan par nirmaan kaary aisee jagah karaana hai jahaan par jo paristhitiyaan hain unake baare mein poornatah nahin pata hai anishchitata hai (uncertain) conditions. Aur isakee haani yah hotee hai ki thekedaar ko ek adhiakatam laabh jo contract mein likha hai percentageej mark-up usase kabhee jyaada phaayada nahin ho sakata hai. To thekedaar kitana bhee achchhe se kaam kare unhen jo ek adhiakatam laabh ya maximum profit milane vaala hai usase jyaada kabhee profit nahin ho sakata hai.

(Reference Time 18:34)





To hamane dekha ki separated anubandh teen prakaar ke ho sakate hain; pahala jisamen ham lumpsum ek saath paisa de rahe hain, doosara vastu dar ya item rate contract jahaan par har gatividhi ka rate pahale se fix kar diya jaata hai aur jitana bhee kaary hota hai usake anusaar bhugataan kiya jaata hai. Teesara hua cost plus contract jahaan par jitana bhee kharcha ho raha hai us kharche mein kuchh extra percentage jod diya jaata hai aur vah munaaphe ke taur par diya jaata hai. Aaiye ab ham doosare prakaar ke contract jo hai integrated contract (eekert contract) par charcha karate hain. Yahaan par teen contract kee charcha kee gae hai design build, turnkey contracts aur build operate transfer.

(Reference Time 19:24)

**Department of Civil Engineering  
Indian Institute of Technology Kanpur**

**एकीकृत अनुबंध - बनाई गई डिजाइन  
Integrated Contracts - Design build**

डिजाइन और निर्माण दोनों के लिए ठेकेदार जिम्मेदार है

एकल संगठन (Single organization); संयुक्त उद्यम (Joint-ventures) की अनुमति होती है

मालिक Owner	ठेकेदार Contractor
<p><b>लाभ (Advantages):</b> समग्र और व्यापक दृष्टिकोण (Holistic and comprehensive approach);</p> <p>कम विवाद और मुकदमे (lawsuits)</p> <p><b>चुनौतियाँ (Challenges):</b> ठेकेदार का चयन महत्वपूर्ण है - पूरी जिम्मेदारी ठेकेदार की रहती है</p>	<p><b>लाभ (Advantages):</b> पूर्ण नियंत्रण। नवाचार (innovation) और लागत प्रभावी अभ्यास (cost-effective practices) को बढ़ावा देता है</p> <p><b>हानि (Disadvantages):</b> बड़ी टीम की जरूरत, अधिक लागत निवेश</p>

13

Aaiye sabase pahale ham baat karate hain design build contract ka. Separated contract mein maine aapase kaha tha ki aap design ko pahale finaliz kar lete hain usake baad aap bid karate hain aur aap aisa thekedaar dhoondhate hain jo design ke anusaar kaary kara sake. Integrated contract ya design build contract kuchh alag hote hain jahaan par design aur nirmaan donon ka kaary ek hee thekedaar ko diya jaata hai. Ek hee thekedaar yah jimmedaaree leta hai ki vah design bhee karega aur nirmaan kaary bhee karega. Yah ek single organization bhee ho sakatee hai ya kae baar kuchh sangathan saath mein aa sakate hain aur vah joint venture kar sakate hain aur vah kahate hain ki ham milakar design karenge aur phir nirmaan kaary bhee ham hee karenge. Aaj kal is prakaar ke contract bahut jyaada prayog mein laaye jaate hain. Isaka jo men laabh hai vah ye hai ki ek holistic aur comprehensive approach rahatee hai, ek samagr drshtikon rahata hai. Jo design kar rahe hain unhen pata hai ki nirmaan kaary bhee unhen hee karana hai, jo nirmaan kar rahe hain vah design kaary mein bhee involve hote hain isase hota yah hai ki shurooat se holistic approach rahatee hai aur yah sunishchit kiya ja sakata hai ki jo design karaaya ja raha hai ya jo design ho raha hai use nirmaan karane mein koe mushkil to nahee aayegee. Ek hee ikae design aur nirmaan donon kar rahee hotee hai iseelie kam vivaad ya mukadame hote hain lawsuits kam ho jaate hain. Jo hamaara maalik hai use designer aur jo nirmaan kaary kar raha hai contractar unake beech vaartaalaap nahin karaana padata hai baar-baar. Ek single point of contract hota hai to maalik ke lie aasaan ho jaata hai ki vah kaam ko successfully complete karava pae. Chunautiyaan aatee hain thekedaar ke chayan mein ek hee thekedaar design aur nirmaan kaary donon karega. Aise

bahut kam thekedaar hain jo is tarah ka kaary kar paate hain aur jo pooree javaabadaaree hai vah usee thekedaar par aa jaatee hai. To jo bhee ham thekedaar ka chayan karate hain vah bahut mahatvapoom ho jaata hai aur hamaare paas kam options hote hain jis kaaran kaae baar design build contract karane mein jo hamen laagat lagatee hai vah jyaada ho jaatee hai kyonki aise kaam thekedaar hain jo is prakaar ka kaary karate hain to vah hamase jyaada bhugataan maangate hain.

Aage badhate hain thekedaar ke najarie se dekha jae to poorn niyantran thekedaar ke paas rahata hai koee bhee innovation ya phir cost effective practices ko follow karane ka motivation rahata hai unhen badhaava milata hai ki vah naee takaneekee ka prayog karen aur koshish karen ki kaam kam se kam kharche mein ho. Isaka jo disadvantage hai ya haani hai vah yah hai ki ek badee team kee jaroorat padatee hai aur is prakaar ka kaary karane mein jo nivesh hai vah bhee bahut jyaada hota hai, adhik laagat lagatee hai. To yah hua design build contract jahaan par design aur nirmaan donon ka kaary ek hee ikaee kar rahee hai.

(Reference Time 23:11)

**Department of Civil Engineering  
Indian Institute of Technology Kanpur**

**एकीकृत अनुबंध टर्नकी  
Integrated Contracts Turnkey**

ग्राहक थेकेदार के साथ आवश्यकताओं (requirements) पर चर्चा करते हैं

थेकेदार सर्वेक्षण (surveys) करता है, डिजाइन (design) बनाता है, खरीद (procurement) करता है, निर्माण (construction) करता है और ग्राहक को अंत में चाबियाँ सौंपता है

मालिक Owner	थेकेदार Contractor
<p><b>लाभ (Advantages):</b> एकल इकाई (Single entity) सभी गतिविधियाँ करती है; जटिल परियोजनाओं (complex projects) के लिए उपयुक्त</p> <p><b>हानि Disadvantages:</b> महंगा हो सकता है; कम नियंत्रण Can be costly; Less control</p>	<p><b>लाभ Advantages:</b> पूर्ण नियंत्रण, नवाचारों को बढ़ावा देता है Complete control; Promotes innovations</p> <p><b>हानि Disadvantages:</b> भारी निवेश (अयोग्य हो सकता है) Huge investment (might not qualify)</p>


नवीन शर्मा की सादर तैयारी | सहायक प्रोफेसर | दिल्ली विश्वविद्यालय

14

Isee ka ek extension hota hai jise turnkey contract kaha jaata hai. Turnkey agar aap shabdon ko dekhen to isaka arth yah hua ki saara kaary is prakaar kiya jaata hai ki maalik aake sirph chaabee ghumaayega (turnkey) karega. Iseeliye yahaan par jo graahak hai vah thekedaar ko apanee aavashyakataayen ya requirements bata deta hai usake baad phie vah thekedaar kee jimmedaaree ho jaatee hai ki vah sarvekshan karavaaye, design banavaaye, jo bhee khareedee hona hai vah karavaaye, nirmaan kaary hona hai vah karavaaye in sabhee gatavidhiyon mein jo bhee coordination hona hai un sabaka dhyaan thekedaar rakhata hai aur graahak ko ant mein sirph chaabee saumpata hai. Aap isaka phaayada to samajh hee chuke honge ki ek single entity sabhee gatavidhiyaan kar rahee hain agar koee jatil project hai ya complex project hai to vahaan par yah bahut upayogee hota hai kyonki kisee bhee complex project mein multiple stakeholders hote hain, bahut saaree ikaiyaan hotee hai jo ek saath kaam karane aatee hain. To agar ham turnkey contract de rahe hain to vah thekedaar kee jimmedaaree ho jaatee hai ki vah saaree agencies ke saath milakar kuchh is prakaar kaam karen jo bhee maalik kee aavashyakataen thee ya requirements theen vah poorn ho sake.

Jaise hamane charcha kee pichhalee baar maalik kee taraph se disadvantage yah hai ki yah adhikatar mahanga ho jaata hai aur maalik ke haanth mein control ya niyantran kam rahata hai. Thekedaar ke paas pooraa control rahata hai. Agar aap ise thekedaar ke nazariye se dekhen to same baat jo hamane pahale karee thee ki complete control hai (poorn niyantran hai), saath hee saath kuchh bhee innovation karane ka unhen ek motivation rahata hai ya unhen badhaava milata hai ki vah kuchh innovations karen. Disadvantage, bhaaree nivesh kee jaroorat hai, huge investament kee jaroorat hai aur kae baar yah bhee hota hai ki turnkey project itana complex project hota hai ki bahut jyaada paise kee jaroorat padatee hai aur kae chhote contractors ke paas itanee raashi nahee hotee hai ya phir unake paas itana anubhav nahee hota hai ki unhone itane bade projects pahale kiye hon aur us kaaran se unhen disqualify kar diya jaata hai kyonki maalik chaahata hai ki vah agar itana bada project kisee ko de raha hai to vah sirph aise contractors ko de jinhone is prakaar ka itana bada kaary kabhee pahale kiya ho. To kabhee-kabhee thekedaar ke nazariye se ek disadvantage ho jaatee hai ki vah disqualify nahee kar paate hain.

(Reference Time 25:48)



## Department of Civil Engineering Indian Institute of Technology Kanpur

एकीकृत अनुबंध – बिल्ड ऑपरेट ट्रांसफर (बीओटी)  
Integrated Contracts – Build Operate Transfer (BOT)

HOT: निर्माण (Build), संचालन (Operate) और ट्रांसफर (Transfer) (Build, Operate, and Transfer)


निर्माण के लिए धन जुटाने (fund raising) की जिम्मेदारी भी ठेकेदार की रहती है



**मालिक**  
Owner

**लाभ (Advantages):** सरकारी परियोजनाओं के लिए उपयुक्त.  
(Suitable for government projects)

कम लागत के साथ विकास को बढ़ावा देता है  
(Promotes development with less cost implications)



**ठेकेदार**  
Contractor

**मुख्य विचार (Key considerations):**

- दीर्घकालिक प्रतिबद्धता (Long term commitment)
- आर्थिक एवं तकनीकी (Economic & technical) फीजिबिलिटी (feasibility)
- सामाजिक एवं प्रशासनिक पहलू (Social and administrative aspect)

**हानि (Disadvantages):** अधिक जोखिम (Higher risks)

बिना लागत की संशोधन द्वारा के उपरोक्त प्रस्ताव. किसी प्रकार के लिए।

15

Ab ham aage badhate hain ek aur contract jo aaj kal bahut jyaada use ho raha hai us pe charcha karate hain use kaha jaata hai bot (build operate transfer), isaka udaaharan aapane dekha hoga highways mein ya roads par. Build operate transfer, bot mein bee jo hai vah build hota hai ya nirmaan; operate jo hai vah sanchaalan hua aur phir transfer hota hai. Nirmaan ke lie jo dhan kee jaroorat hotee hai vah bhee thekedaar kee jimmedaaree hotee hai ki vah us dhan ko jutaaye. Yah kuchh is prakaar hota hai ki maan leejie sarakaar chaahatee hain ki delhi aur agra ke beech mein highway bane, vah kahatee hain ki ham build operate transfer contract ka prayog karenge to vah thekedaar se kahatee hain ki aap jo bhee paisa lagane vaala hai road banaane ke lie, vah aap jutaen aap nirmaan kaary karen, road ko banaen phir agale 20 saal tak aap use sanchaalan karen ya operate karen aur jo bhee paisa aap usase 20 saal tak kamaate hain vah aap apane paas rakh sakate hain. Maan leejie aap agar kisee sadak se ja rahe hain to jo toll hota hai vah toll ka price us thekedaar ke paas jaata hai 20 saal tak aur 20 saal baad jab contract poorn hone vaala hota hai to jo hamaara asset hai, jo hamaara highway hai ya road hai use transfer kar diya jaata hai thekedaar se vaapas sarakaar kee taraph. To

moolatah ho yah raha hai ki jo thekedaar hai vah kuchh banaega use kuchh saal tak operate karega usase jo bhee munaapha hoga vah apane paas rakhega aur phir jab contract poorn hoga to vah us asset ko phir se transfer kar dega. Agar aap dekhen to maalik jo hai khaasakar jo government organizations hai vah ise bahut jyaada prefer karatee hain. Jo hamaaree sarakaaree pariyojanaen hain unake lie yah upayukt hota hai kyonki aap kam laagat mein jyaada vikaas kar sakate hain kyonki jo hamaaree private party hain ya jo thekedaar hai vah paisa jutaana vaala hai aapakee taraph se kam paisa lagata hai aur kam paise mein vikaas ko badhaava milata hai. Agar aap thekedaar ke najari ye se dekhen to isamen kuchh baaton ka mukhy dhyaan diya jaana chaahie. Pahala hai yah ek long term commitment hota hai hamane dekha ki jo construction hai ya build (kaary) hai aur jo operation hai yah 25 se 30 saal tak chal sakata hai, to thekedaar ko yah sunishchit karana hota hai ki vah itane long term tak is project ko operate kar paega. Saath hee saath use yah dekhana hota hai economically feasible hai ki nahin, aarthik feasibility check karate hain kyonki ham dekh rahe hain ki jo nirmaan kaary hai usaka paisa thekedaar khud juta raha hai aur vah maan leejie teen ya chaar saal mein poora nirmaan kaary karata hai lekin usase jo munaapha hai vah usake baad 20 saal tak aana hai jab use vah operate karega. To use dekhana hota hai maan leejie agar ham highway ka example len to use yah dekhana hoga ki sadak ko banaane mein kitana kharcha ho raha hai aur is sadak par bhavishy mein kitanee gaadiyaan jaayengee usaka kitana anumaan hai vah kitana toll bhareengee aur usase use kitana phaayada hoga, is prakaar ke economic feasibility karana hota hai. Saath hee saath takaneeki feasibility (technical feasibility) karana bhee jarooree hai ki vah jo kaary karana chaah raha hai vah technically feasible hai ki nahin, sachamuch kiya ja bhee sakata hai ki nahin.

Isake baad kuchh aur pahaloo jaise saamaajik evan prashaasanik pahaloo ka bhee dhyaan rakhana hota hai. Maan leejie highway ya road banana hai aur vahaan par abhee kuchh ghar hai, to land acquisition karana hoga bhoomi adhigrahan karana hoga. Is prakaar ke kae pahaloo rahate hain jinaka dhyaan rakhana hota hai aur thekedaar ko yah sab risks jo, hai jokhim jo hain unaka dhyaan mein rakhate hue is prakaar ke contract mein judana hota hai. To disadvantage agar ham thekedaar ke pahaloo se dekhen to vah yah hai bahut jyaada jokhim rahate hain is prakaar ke build operate transfer contract mein.

**(Reference Time 30:26)**



## Department of Civil Engineering Indian Institute of Technology Kanpur

### निर्माण अनुबंधों के प्रकार Types of Construction Contracts



To aaj hamane kul milaakar yah 6 prakaar ke contracts par charcha kee. Main yah jaroor bataana chaahata hoon ki aur bhee kae prakaar ke contracts ho sakate hain, mainne yahaan par charcha karane ke lie inhen do category mein baanta hai lekin kae baar aisa bhee ho sakata hai kee design build contract hon lekin usaka payment lumpsum karaaya jae ya design build contract ho aur usaka payment item rate kiya jae ki har item jo aaegee usaka payment ho. To yah contracts ek doosare ke saath milajulakar bhee kae baar ek naya contract bana sakate hain. Isake alaava kuchh aur contracts hain jaise dbhot ya phir renovation contract ya phir maintenance contract jinake baare mein hamane aaj charcha nahee kee.

**(Reference Time 31:16)**



## Department of Civil Engineering Indian Institute of Technology Kanpur

### उपयोगी प्रकाशित पुस्तके

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- Justin Sweet, Marc Schneier (2014) *Construction Law for Design Professionals, Construction Managers and Contractors*.
- Jha K.N., *Construction Project Management- Theory and practice*, 2<sup>nd</sup> Edition, Pearson India Education Services Pvt. Ltd., UP, India 2015

Yah kuchh upayogee prakaashit pustaken hain jinamen in binduon par charcha kee gae hai. Bahut-bahut dhanyavaad!