

Differing Site Conditions

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Subsurface Projects in General

- Unique in the interdependence and interrelation of:
 - The Subsurface Conditions
 - The Design
 - The Construction Means and Methods
- The majority of subsurface problems are a result of a disconnect in these three factors

It's a Three Legged Stool



Elements of a DSC

- Contract indications
- Reasonable contractor interpretation
- Reliance
- Material difference
- Causation
- Damages
- Notice

Risk Allocation – an Owner's Decision

- Represents one of the most significant components of the project planning effort
- As a general guiding principle, the risk should be assigned to the party in the best position to manage that risk
 - and,
- With that burden goes the benefit
- While it is possible to transfer all risks to the design builder, it is not advisable

DSC Risk Allocation on a Design-Bid-Build Project

- The Owner “owns” the ground
 - Owner performs the site investigation
 - Owner provides a report
 - The Contractor has a right to rely on the that report in preparing its bid
- If encountered conditions differ from those indicated, a contract adjustment will be made

DSC Risk Allocation on a Design-Build Project

- All over the map
- Standard Form Documents, EJCDC, AIA, AGC, DBIA
- Draft from scratch documents

Continuum of DSC Risk Allocation Possibilities

- No additional risk transfer
 - Owner performs investigation and warrants the subsurface information
- Risk sharing arrangement
 - Owner performs and warrants subsurface data
 - Contractor responsible for interpretations and ground behavior
- Total risk transfer
 - Owner disclaims any and all subsurface information

Disappointed Expectation on Design-Bid-Build Subsurface Projects

- Disappointment because of a failure to consider:
 - Interdependence of design and construction functions.
 - Interrelationship and interdependence between design and construction considerations and successful project delivery.
 - Interrelationship and interdependence between design and construction considerations and subsurface conditions.
- Successful delivery of a subsurface project typically involves admixture of design, construction and subsurface conditions, factors and considerations.

Examples of Events and Circumstances Giving Rise to Disappointed Expectations:

- Inadequate subsurface investigation
- Failure to disclose adequate information to the Constructor
- Design, development and finalization with no or inadequate constructability review
- Failure/inability of Design Engineer to consider in design development process potential construction means and methods and/or equipment selections of the Constructor
- Inadequate or no communication/interaction between Design Engineer, Geotechnical Consultant and Constructor during site investigation and design development process
- Constructor selection of construction means and methods and equipment which are not compatible with design approach and/or site conditions

Examples of Events and Circumstances Giving Rise to Disappointed Expectations:

- Tensions and ambiguities in design responsibility that result from "untimely" value engineering process
- Failure to clearly and fairly allocate risk in the contract documents for different site conditions
- Lack of constructive (*e.g.*, problem-solving) approach to design and construction issues during the construction phase
- Disputes that arise over whether additional time/cost due to differing site conditions or Constructor performance problems (for example, due to selected construction means and methods and equipment).

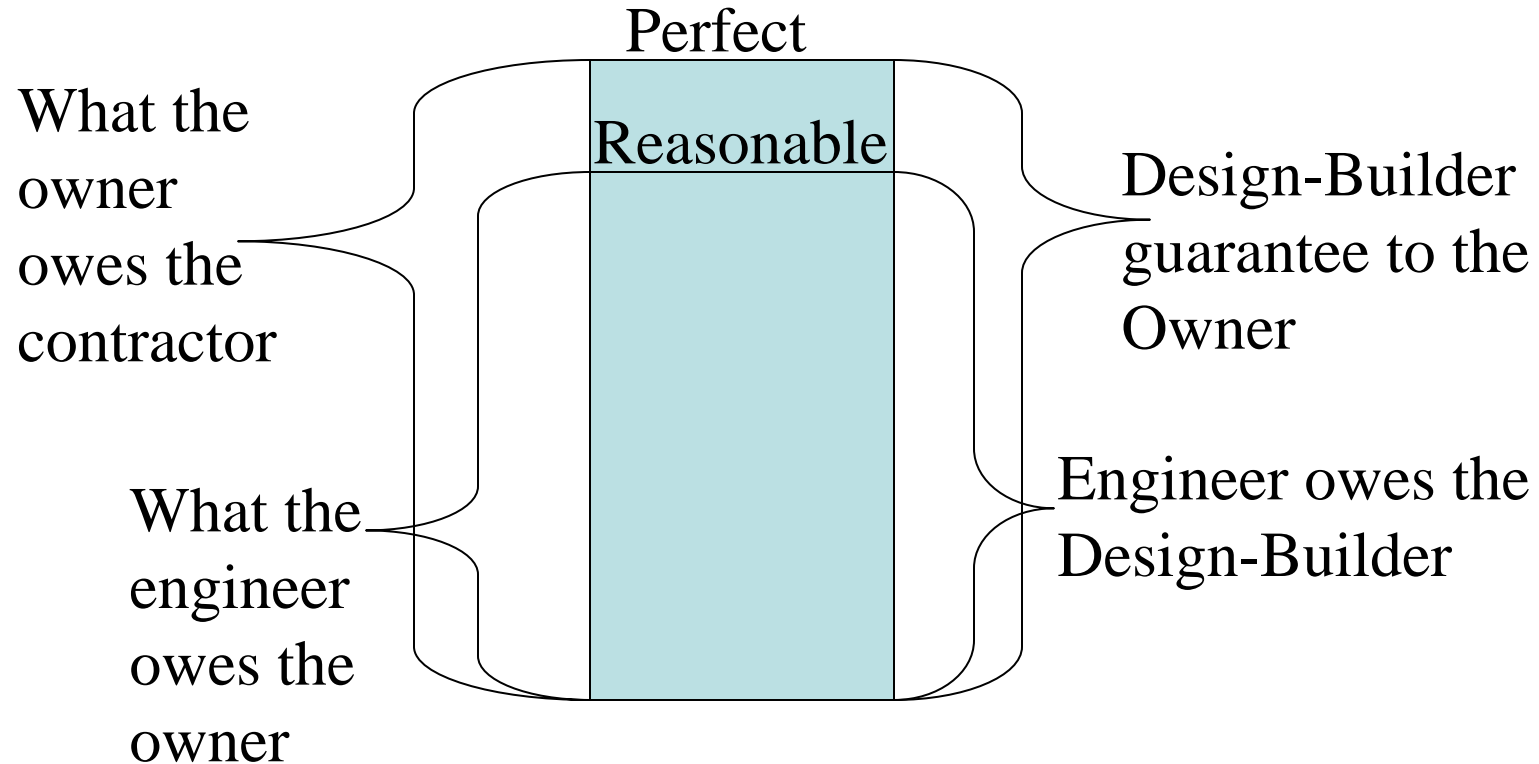
Why not allocate all Risks To the Design-Builder?

- Reduce the field of responsible, qualified bidders
- Increase the front end cost of the work in terms of contingencies
- Increase the possibility of disputes
- Increase the possibility of contractor default
- Third party impacts
- Schedule impacts
- That allocation may be illusory

Reasonable Care vs. the Spearin Doctrine

- Design-Bid-Build

- Design-Build



Design-Build Surety Challenges

- Underwriting a project that has not been designed yet
- Design Liability: sureties do not want to accept obligation for defective design
- Design Performance Guarantee: sureties are not accustomed to this exposure