

Marina Rosso

All Public Projects In The United States Should Be Required To Purchase
Inherent Defect Insurance

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ABSTRACT

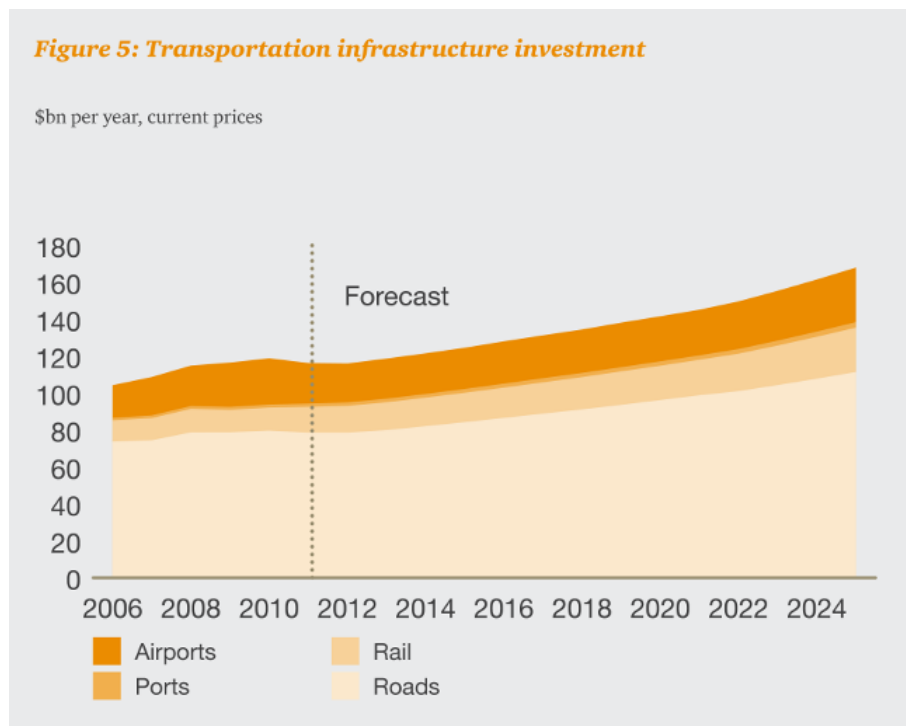
Defects in commercial building construction can be hazardous, expensive, and destructive to reputations; yet they remain a consistent occurrence. In many cases, responsibility for the fault of damages is never clearly established and the owner may have to pay for damages himself. Although a contractor is bound to his work, many fingers are pointed and negligence has to be proven for the contractor to pay. This leads to arguments between different parties associated with the construction while the building is not built. Uniquely, many European countries insure projects with Inherent Defect Insurance (IDI). IDI provides protection against the cost of repairing, restoring, or strengthening of the insured building if damage is caused by an inherent structural defect. There is a technical control by an independent agency, provided through IDI, which advises the insurers of the sufficiency of the structure by doing checks on the design and the rendering of the works. IDI guarantees coverage for a period of 10 years after the construction completion date, reduces legal costs, and allows for the unavoidable "blame game" to establish liability not delay the repairing of the building. IDI costs about .6% - 1% of the total construction costs, which is accounted for in the original bid price. Thus, all public projects in the United States should be required to purchase Inherent Defect Insurance so the public is assured that it's projects will be repaired rather than litigated at it's expense.

INTRODUCTION

A new construction project is a long-term investment and significant financial obligation for an owner. With the return of economic confidence and liquidity, the construction industry of the United States is booming. Today, *** X amount of public projects are currently being funded in the US. X percent of government funds go towards construction. However, as the nation emerges from this recent period of economic stringency, it needs to remember to be efficient with its money. An overseeing body, the government, is making monetary decisions on the taxpayers' behalf. As the government tries to get the economy flowing, it is rebuilding much of its infrastructure to get it stimulated. Taking the Nation's network of highways as an example, one can agree they play a vital role in the US economy; private commercial activity and people's daily lives depend on that transportation infrastructure. In 2007, the public sector spent \$146 billion to build, operate, and maintain the highways in the US. "Although the federal, state, and local governments can impose a variety of taxes, fees, and user charges, the funds to pay for highway infrastructure are ultimately drawn either from users of that infrastructure or from taxpayers in general. As taxpayers, the citizens of the US are the source of revenue used to fund these projects. These funds are combination of Federal, Local, and State taxes, including excise taxes of gasoline. "The gas tax currently produces about two-thirds of the fund's total revenues" (CBO.gov). However, these finances are provided in expectation of future returns through operation, which must be paid later by highway users and taxpayers. So how can US citizens protect their money when an overseeing body is making decisions on their behalf? Although this surge in the construction industry is beneficial to the community and economic stimulation, any new construction project can experience damages, which may not become evident instantly. Defects in commercial building can be hazardous, expensive, and lead to long delays in the building process while fault to the correct party is being established. With adequate first party insurance, the owner can be protected against the cost of repairing, restoring, or strengthening the insured building. Inherent Defect insurance is a first party insurance policy that guarantees the

building will continue before fault is determined. Thus, all public projects in the United States should be required to purchase Inherent Defect Insurance so the public is assured that it's projects will be repaired rather than litigated at it's expense.

Projected Government Spending

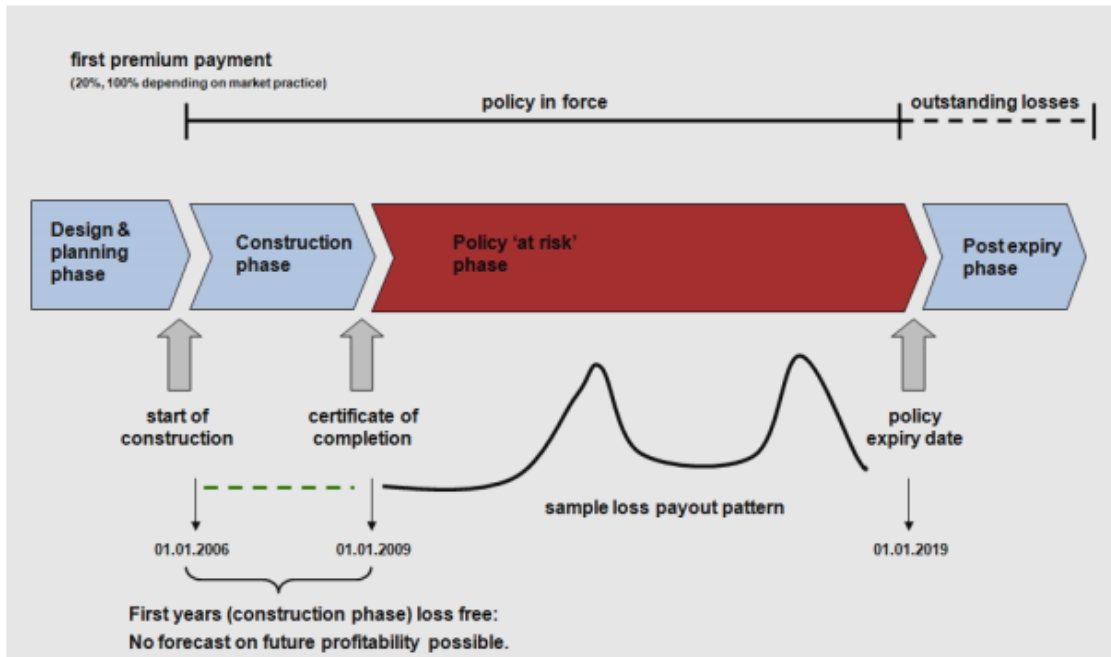


(PWC, 2011)

WHAT IS IDI

Although the specific terms of inherent defect insurance will vary with each private insurance company, the general principles remain the same. Inherent Defect Insurance, also referred to as decennial liability, provides protection against the cost of repairing, restoring, or strengthening a property if damage occurs to it as a consequence of a fundamental defect in a structural element of the building. “Decennial responsibility covers both latent and patent defects, say perhaps patent defects that have been accepted on handover by the building owner. The responsibilities are imposed both on those who design and those

who execute the works” (XL Insurance). These errors may have been produced as a result of faulty workmanship, design, or materials. The coverage period typically lasts for 10 years past practical completion of the building, which is when it handed over to the owner. However, to initiate the qualification process the premium is paid in full at the inception of the bid. Yet, there is no right to termination by the insurer or the insured, even after a claim, during the period of indemnity. The cost of IDI generally lies “between 0.6% and 0.8% of the total construction cost, depending on the coverage” (Scor, 2014). Additionally, a third party Technical Inspection Service is required to be purchased, which costs “around 0.3% of the total construction cost and will depend on the complexity of the building, along with the construction period” (Scor, 2014). An independent engineering firm habitually checks design and construction works. This insurance operates on a first party basis, meaning, in the event of an inherent structural damage, “the policy will pay out and there is no requirement to prove that it arose as a result of negligence of a third party” (Realty Insurances). With this policy, upon discovery of a defect, there is no initial investigation regarding fault. The damage is fixed immediately and determination of assigning contractor liability is left up to the insurance company. The insurance will cover the cost of all legal, professional, or consultants’ fees. Furthermore, it covers the additional repair costs that may be incurred as a consequence of complying with new legislation or regulations passed by the government.



(SCOR, 2014)

WHY WAS IDI CREATED

First party insurance, such as IDI, is a reaction to the unease of the public authorities in regard of the construction quality. It is set in place to protect the owner and his successors. According to the U.S. General Services Administration, bidding on Federal construction projects is executed per a low bid basis. The project will be awarded to the lowest responsive bidder in accordance with FAR 15.1. There is no screening process and allows the invitation for bid to be open to everyone.

Although the low bid process promotes competition amongst contractors, it can produce less than realistic numbers rising through cut backs in schedule, cheaper materials, and less qualified suppliers. This award process also allows unqualified contractors to submit bids. Selecting a contractor exclusively on price severely belittles the long-term value of vital criteria, such as time and quality.

Additionally, unskilled laborers hired through the low bid process can lead to faulty workmanship. Faulty workmanship may in turn lead to latent structural defects, leaving the owner, the taxpayers, accountable for litigation costs and rework. “The objective behind this law, requiring all parties to be insured against decennial liability, was to remove building owners... from lengthy litigation where there might be a dispute between the contractor and the designer as to who is responsible for the defects” (XL Insurance).

Essentially, when an inherent defect is exposed, the insured owner can immediately file an IDI claim and repairs can start without delay. Thus, the owner avoids the seemingly endless controversial discussions with the contractors and designers in clarifying liability for the loss.

COVERAGE

Inherent Defect Insurance is a first party policy to protect the owner and its successors. The policy will respond to any significant structural damage to the completed building by covering the cost to repair, restore, or strengthen it. The sum insured is equal to the total rebuilding cost when the policy takes effect. Therefore, Inherent Defect Insurance only requires one premium paid up front. Fortunately, there is no right to cancellation of the policy by the insurance company once a policy has been granted, especially if a claim is filed. The insurance company has a contractual obligation to cover any physical damages that render the property structurally deficient, if they were not apparent or foreseeable at the time of the Temporary Certificate of Occupancy (TCO). These structural damages must be due to faulty design, workmanship, and/or materials. Sum insured is equal to the amount of the construction cost. With this insurance, you are pre-financing the repair costs. Provision has to be made for inflation during the period. Moreover, Insurance provides coverage even if liable designer or contractor doesn't exist anymore. Coverage commences at TCO and with the

certificate of approval from the inspection agency confirming that the building carries a normal risk for inherent defects.

INHERENT DEFECT

“An inherent defect is one that is undiscoverable at the date of practical completion or inception of the cover, but manifests itself at a later date and causes actual physical damage, but could not have been reasonably discovered at the time by the insured” (REALTY INSURANCE).

Causes of Inherent defects (DOHA):

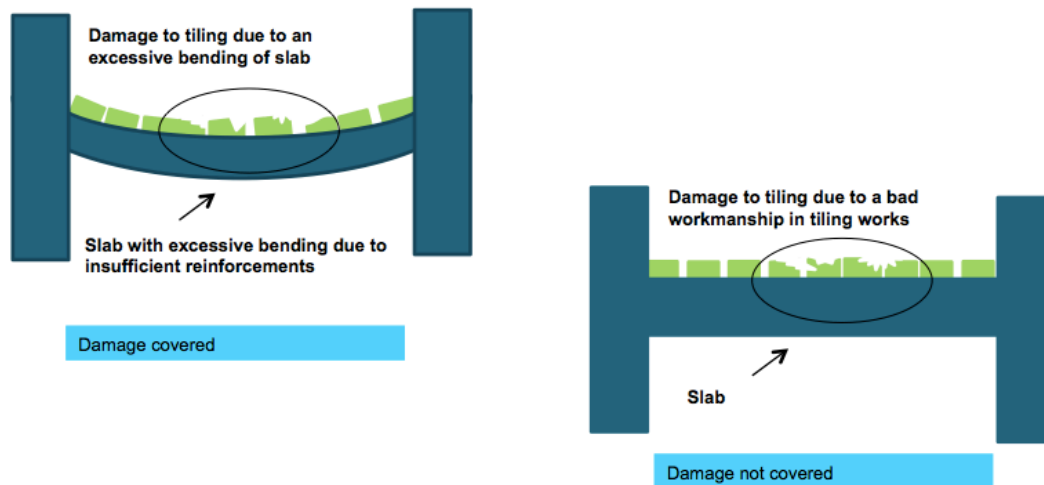
- Faulty Design:
- Inadequate foundation/consideration of soil properties
- Inadequate consideration of long term effects such as creep, shrinkage of concrete/ climatic effects
- Inadequate provision
- Lack of joints or detailing of steel reinforcement

The specific types of inherent defects covered through Inherent Defect Insurance are limited to Structural Defects.

STRUCTURAL DEFECTS

IDI covers any structural defects not visible at the time of completion of the building or when it is handed over to the owner. Structural defects are damages to internal or external load bearing elements that are vital to the support of the structure. Some common structural elements covered by this insurance include foundations, column, and beams; external walls and any cladding; roof structures; stairs and floors; and external doors and windows. However, IDI normally excludes any damage originating from non-structural works, an alteration of the building after completion, inadequate maintenance, and natural disasters.

Coverage Example



Scor Campus 2014 Anglais PPT

TECHNICAL INSPECTION

A fundamental aspect of IDI, is the presence of habitual technical audits carried out by an independent consultant, which is commonly referred to as a technical inspections service. This is a specialized engineering firm chosen by the owner, but approved by the insurer. The technical agent's "role is to monitor the project throughout the design and construction phases on behalf of insurers", but has no involvement in the construction process in any manner (Realty insurance). They will complete a design review and compare the building foundations to the property's soil conditions, along with provide commentary to the owner and insurer about "innovative materials and construction processes" (SCOR). The third party inspector will distribute reports to the insurers throughout the entirety of the building process in order to verify the property has been constructed in agreement with the overruling governing building standards and permits. The independent inspector does not replace any inspections required by the contractor, but acts as additional oversight and the overruling body. By having the insurance company request third party review of the design and construction, the quality of building is increased, even if some damage will always occur.

When people who are involved in neither the design nor the construction process do this review, the probability of catching potential mistakes is higher than if internal inspectors do the review. An independent testing agency has no pressure from the builder to complete rushed inspections in order to stay on critical path of the construction schedule. Additionally, the technical agent is consistently monitoring, through regular site visits, if the design and construction methods are in line with good building practices. If any inspection does not pass or there is a foreseeable problem that may arise in a technical audit, then the inspector will report it to the insurers. However, many issues are highlighted and resolved at an early stage in the audit; therefore, never reported to the insurers. Thus, what may have been caused a greater issue later on was avoided and resolved economically and successfully. Moreover, the third party inspector acts as a communicator between members of the project team to make sure that responsibilities are clear so there is no discrepancy on who was allocated a task. Lastly, at practical completion, the Technical inspector will issue a certificate of approval to the insurance company. This certificate of approval will next be evaluated in the underwriting process of the policy.

UNDERWRITING PROCESS

In order for the insurance company to issue the policy, each project has to pass a number of checks and balances set by the insurer. An information review and analysis of technical inspection reports act as leading indicators for the risk that the insurance company will be taking on. Some of the underwriting requirements of the insurance company are a soil study conducted by the technical agent, a technical inspection agency's risk appraisal report, and the review of plans and specifications of the building. Additionally, the insurance company will consider the period of construction, the cost of construction, which includes design fees, and then ask for a deposit premium, which is typically 20% of the foreseen premium.

FRENCH LAWS

“Whether or not taking out decennial insurance is a contractual requirement, it is a mandatory public law requirement in France and cannot be avoided” (XL Insurance).

SPINETTA ACT - FRANCE

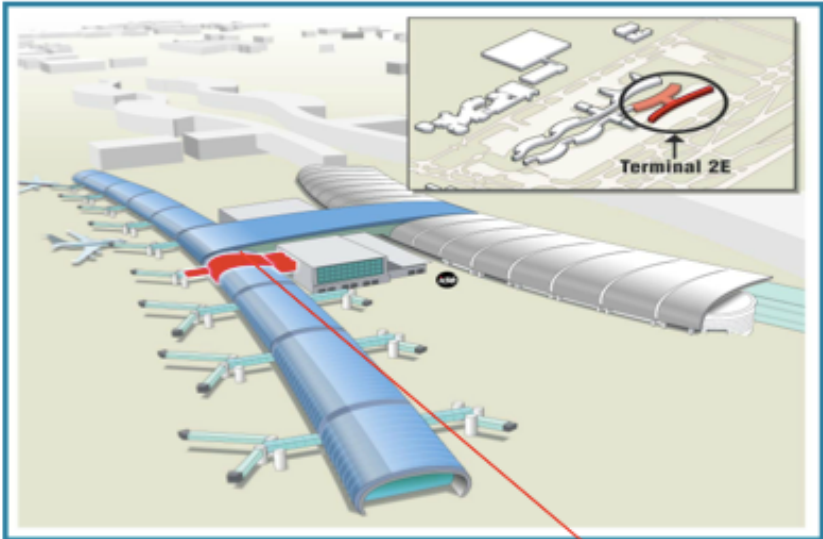
Enacted in 1978, the Spinetta Act makes it required for the owner of a building undergoing major construction to get a distinct insurance policy called “assurance dommages” before the building starts. This insurance is intended to prevent any situation from worsening or being delayed by providing speedy payment for the repairs prior to acknowledging liability of the parties involved. The Spinetta law introduces obligatory insurance for major structural defects, and defects which may threaten the safety of persons or alter the performance of the building. Three guarantees are included: the guarantee of perfect achievement for 1 year, the guarantee of satisfactory functioning for 2 years, and the guarantee required for the decennial responsibility which is for 10 years. The regulatory system in French construction can be described as a hybrid system between authorization by public parties who allow control by third parties of the private sector, combined with an insured based system which is decennial insurance.

Before the Spineta Act was passed in France, the average period to settle a claim in post construction period was 7 years. It was one of the reasons why the authority introduced a first party policy “Dommages Ouvrage”, under the Spinetta Act. This policy is quite functioning as IDI policy. If the damage is covered, it is not necessary to know who is liable for it. This insurance should pay quickly and after could make recoveries from the people who are responsible for the damage, in fact from their insurers as in France all builders have to be insured. This can take years but the repair works are done quickly. For example, in

Roissy Terminal E collapse, has not yet established liability, but the terminal has been fixed and functioning for a few years now.

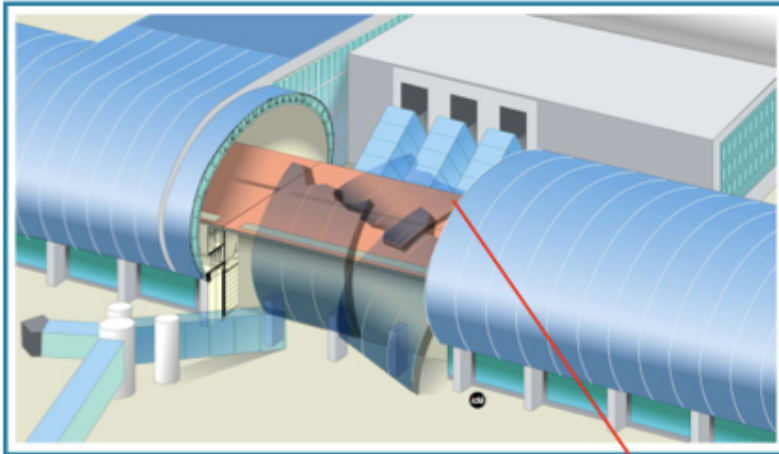
CHARLES DE GAULLE TERMINAL 2E – CASE STUDY

France is a great example of a country where this type of first party insurance is mandatory for construction of public buildings. The Charles De Gaulle Airport illustrates how IDI will benefit the public. The Charles De Gaulle Airport was completed in 1999 and initially cost about 900m USD. The terminals were a showpiece of French engineering and design. The structure was “like a giant curved Earthworm lined with a concrete honeycomb” (A Crushing Blow, 2004). However, in 2004, a 30-meter section of the glass and steel roof of terminal 2E collapsed. The exact cause of the collapse is unclear, but according to Patrick Eyer at the DOHA Marsh seminar, it was caused by a combination of faulty design and faulty workmanship. “Theories range from design faults and construction errors to a rush to finish the job and budget constraints” (A Crushing Blow, 2004). The slip of liability between all responsible builders and designers is not yet established, but the Terminal has been repaired since March 2008. Because the owner had Inherent Defect Insurance, the Insurance company, SCOR, quickly rebuilt the structure for about 140m USD (SCOR, 2014). It has been 10 years now, since the collapse of the terminal and fault is still undetermined due to many parties being involved and the pointing of fingers. The Charles De Gaulle airport illustrates how construction damages are generally due to an accumulation of errors carried out by many different people. Therefore, determining liability of each party can be a quite long and tedious process. If the owner did not have Inherent Defect Insurance, this terminal that serves about “10 million people a year” (Structural Technology) would still remain closed and the owner would be suffering the costs of this ongoing trial.

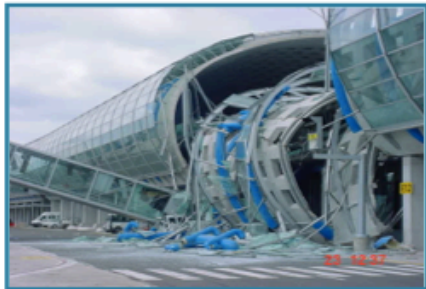


The collapsed area





**Main cause:
Punching of the shell by connecting rods**



(Scor Campus 2014)

LENGTH AND COST OF DISPUTES

As of 2013, the construction dispute value is at \$34.3 million, compared to \$27.9 and \$27.5 in the UK and Continental Europe, respectively (ARCADIS, 2013). Moreover, the length of disputes, in 2013, is about double that of the UK and Continental Europe. The average length of a construction dispute in the US is

13.7 months, while it is 7.9 months in the UK and 6.5 months in Continental Europe. Compared to 2012, “Dispute values in the US tripled to \$34 million in 2013 and also took nearly two months longer to be resolved, increasing from 11.9 months in 2012 to 13.7 months in 2013” (ARCADIS, 2013). This increasing trend is risky for the owners, the taxpayers, who will reap the outcomes of lengthy disputes. Typically, Lawyers charge about \$7 million to fix a \$2 million problem when that is 2.5 times the defect cost. However, if a company just bought that insurance, the fees are taken care of in the insurance cost.

Dispute Costs: Europe vs. The US

Figure 1: Overall Findings

Region	Dispute values (US\$ millions)				Length of dispute (months)			
	2010	2011	2012	2013	2010	2011	2012	2013
Middle East	56.3	112.5	65	40.9	8.3	9	14.6	13.9
Asia	64.5	53.1	39.7	41.9	11.4	12.4	14.3	14
US	64.5	10.5	9	34.3	11.4	14.4	11.9	13.7
UK	7.5	10.2	27	27.9	6.8	8.7	12.9	7.9
Continental Europe	33.3	35.1	25	27.5	10	11.7	6	6.5
Global Average	35.1	32.2	31.7	32.1	9.1	10.6	12.8	11.8

(ARCADIS, 2013)

CASUE OF DISPUTES IN THE US

“The most common cause for disputes in the US during 2013 was errors and/or omissions in the Contract Documents” (ARCADIS, 2013). This is followed by failure to make provisional awards on extensions of time, differing site conditions, incomplete design information, and a failure to properly administer the contract. When there is a failure to accurately allocate or understand each party’s roles and responsibilities, there can be detrimental miscommunication. The contract documents could unclearly dictate who is installing x,y,z; which party is responsible for inspecting x,y,z; and which party’s Quality Assurance program is responsible for guaranteeing all features of work are aligned with the owner’s expectations. Because of the fast pace of construction, many of these

construction programs are bid out with multi-layering of contractors and subcontractors. This makes it hard to determine whose scope of work a latent defect fell under. Thus, the blame game begins and prolongs any dispute.

Another manner that construction disputes arise is through not enough time or money to complete work. With inadequate compensation for extra work, contractors and subcontractors inappropriately accelerate activities or purchase cheaper materials to make up for it. Additionally, when contractors are pressed for time because they under bid their schedule in the low bid award process, they may cut out inspections and save a buck where possible. However, this is not possible with Technical Inspector because they will note it and not allow the inspection to pass, then warn the insurance company in their reports. Therefore, unethical behavior, faulty work, burying before inspection, inadequate inspection have a lower chance of going unnoticed. The construction industry is evolving into an era of Quality Assurance.

The third most common cause of construction disputes in the US is differing site conditions. However, with the request for Inherent Defect Insurance, it is part of the underwriting process for the TIS to check the design of the foundations with the site conditions. In addition, the TIS will provide the insurance agency with soil tests. This should lessen the frequency of unexpected bad soil conditions, improper foundation types, and lower the number of disputes due to differing site conditions. For instance, this would be very helpful in San Francisco where there is bad soil in unexpected areas due to liquefaction and the proximity to the bay. The Transbay Transit Center in San Francisco is a public project being funded by Federal, State, and Local taxes through ARRA. After pouring the foundation walls, the engineers noticed that the walls were encroaching an 1/8" and the concrete was cracking around the perimeter. The encroachment was most likely due to bad soil behind the good soil that the engineer did not foresee. This may have been caught before finishing the work if an inspector was brought on earlier to test soil and review the pile foundation design.

Next, Incomplete Design is the fourth most common cause of construction disputes. This can be mitigated by the application of Inherent Defect Insurance because design review before construction start by the third party inspector is significant aspect of the underwriting process. A great building to look to at illustrate inadequate design is the luxury Harmon Tower known as CityCenter in Las Vegas. This \$8.5 billion complex was a planned 49 stories, but halted at floor 26 after Clark County inspectors discovered construction defects in the design in 2008. This initiated an intricate battle of blame and lawsuits that has left the Harmon in legal limbo as they struggle to decide if they tear it down or keep building. “But more than anything, the Harmon, designed by the noted architects Foster & Partners, stands as a symbol of overconfidence and an overextending construction industry rushing to keep pace with the boom of building and profits” (Nagourney). The issue was spotted by Building Inspectors who noticed the rebar, which was designed to reinforce the concrete were incorrectly placed and missing in some areas. The contractor, Tutor Perini, is arguing that the building was not designed to handle its own weight.

With a bettering US economy and a spike in the construction industry, large sums of money from the government are being thrown into rebuilding infrastructure. This is stretching contractors, designers, and engineers thin and causing them to build faster. Consequently, the transportation sector has, by proportion, the highest number of disputes.

LITIGATION AND PUBLIC TRANSPORTATION

The construction industry of the United States is booming as a symptom of the returning confidence and liquidity in the US economy. This is causing a major spike in the US dispute market. Owners are quick to build, especially the government. Various stimulus programs are being implemented as the US economy narrows in on the improvement of public infrastructure, such as ARRA.

As discovered through survey of International Construction Costs in 2013 by ARCADIS in its annual dispute report, "The transportation sector had, by proportion, the most number of disputes". Majority of the transportation sector is publicly owned, which means the contracts are being awarded per a low bid basis. Because there is currently a surge in the construction industry, bigger and more qualified contractors are less likely to go after the less profitable government jobs when they already are spreading themselves thin with private negotiated work. With a lack of companies to bid public jobs, it is allowing lower tier and unqualified contractors to win bids. Therefore, the risk of litigation and structural defects becomes much higher.

STRUCTURAL DEFICIENCIES IN THE US

During 2013, 10.4% of all bridges in the United States were structurally deficient, with as high as 25% in the state of Maryland (PWC). This statistic is seen after a lack of infrastructure investment, yet there will be a huge surge in infrastructure funding. Overall, "investments are long overdue in rail, roads, water management, electricity ports, prisons, and more" (PWC). One of the main public funding Acts implemented by the American Government is The American Recovery and Reinvestment Act of 2009, which is a response to the economic crisis and targeted at infrastructure development and enhancement. As of 2013, it is injecting \$840 billion into the economy, of which the Brookings Institution estimates \$152 Billion going into infrastructure (Executive Summary, 2011). Furthermore, the Society of Civil Engineers estimates a \$2.2 trillion investment over five years will be mandatory to accomplish structurally sound infrastructure. With this much public funding being dedicated to construction, the government, and the people, have a significant opportunity to protect their money, and facilities, in the long run through the purchase on Inherent Defect Insurance.

WRAP UP INSURANCE

As an owner or a general contractor on a large construction project, one needs to be in control over the jobsite, as well as the insurance program. “Wrap up insurance programs are an increasingly popular risk management technique used by owners and general contractors of large construction projects to exert greater control over total construction costs while enhancing overall project safety” (AON). A wrap-up policy works by combining insurance coverage for multiple parties associated with a project, including all the enrolled general contractors and subcontractors, into one package that is negotiated, purchased, and managed by a single player. This player can either be the owner or the general contractor. This construction insurance program typically provides a wide variety of project related insurance coverage’s, “including workers’ compensation and employer’s liability; general liability; excess liability; builder’s risk; pollution liability; professional liability; and subcontractor default insurance. Even though individual contractors have their own insurance policies, there is a great amount of risk on the project if the general contractor or owner were to rely on the individual policies of the hundreds of subcontracts associated with the project. The general concept of a wrap-up policy is to fend off the gaps in individual coverage’s, such as expired policies and insufficient parameters. Additionally, with a single insurer, claims are processed more efficiently. Wrap up insurance is currently purchased by most General Contractors in the US.

WRAP UP VS. IDI

When asked about the insurance programs set in place by the owner or general contractor on large construction projects, all respondents reached the same conclusions; therefore, the following interview reflects the overall consensus of the group. Rodney Spencely, DPR Construction, explained the purchase of a wrap up policy on a large commercial corporate office building. However, when discussing the application of Inherent Defect Insurance, Mr. Spencely, along with all other responding project managers on the large jobsites, had not heard of it

and found no need to buy Inherent Defect Insurance when there is already a wrap up policy in place. However, IDI is not meant to replace wrap up insurance. It is intended to be paired with it as a coverage for different aspects of the project. Most CM/GC's feel confident in the application of a wrap-up policy because they are comfortable with the services it provides and coverage received for their company. This is not a long-term viewpoint, but more in the moment protection and results. Unfortunately, wrap-up insurance does not effectively protect the owner in the event of a structural defect after the completion of construction. Wrap up insurance protects the owner and general contractor during the building process. On the contrary, Inherent Defect insurance is able to provide that extra security and speedy repairs many years after the completion of the project. Therefore, both insurance packages should be purchased jointly.

NEW LEVEL OF QUALITY ASSURANCE

The concept of protecting the owner through this first party insurance promotes the new construction era of Quality Assurance. Due to the provisions of the policy's underwriting process, a third party inspector has to be present at all times during the construction phase. Additionally, testing and inspection reports have to be issued continuously throughout that process. With an independent inspector overseeing all work, mis-installation will be caught right away and any rework will be performed on the spot, not later on down the road. From an insurance angle, there is less risk of a defect because the building is being built to a higher quality the first time. From a Quality Assurance angle, building it right the first time saves the contractor more money and decreases the chance of rework. Lastly, from an owner's angle, this solves the problem of low bid, and having to award parts of the project to hasty subcontractors. For a city government to raise an extra 1% to buy this insurance is not that difficult. Therefore, constant third party oversight improves the quality of public projects

for the taxpayers, funders and users of the end product. The traditional world of construction where nobody is watching is gone; a culture of quality is taking over.

CONCLUSION

When all the expenses of litigation and inspection are added up, statistics show that it is cheaper for the owner to purchase Inherent Defect Insurance, or a similar first party insurance, at inception of the project. Purchasing this insurance acts as a security blanket for the public, taxpayers, who will suffer from the exorbitant litigation fees down the road. IDI is buying a peace of mind and protection for the owners.

By implementing an Inherent Defect Insurance requirement for all public projects in the US, the construction community and owners have solved several problems. It improves low bid, improves the quality of public projects, gives security to the taxpayers. The cowboy world of construction where nobody is watching is a thing of the past. Quality Assurance and the importance of third party inspections are taking over.

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