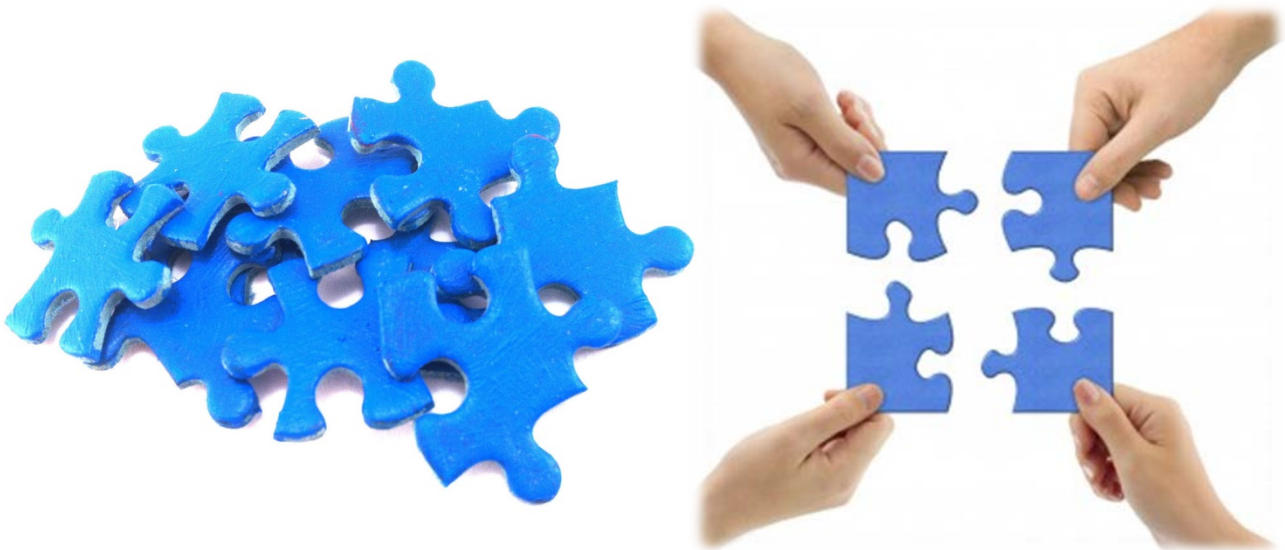


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### IMIA WGP 88 (14)

#### Holistic Covers in Engineering Insurance



From this



to that

The engineering insurance jigsaw puzzle

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# IMIA Working Group Paper

## Holistic Covers in Engineering Insurance

This topic paper discusses holistic insurance covers and the effects on the Engineering insurance industry. To what extent can these be supported by insurance markets and which solutions are already available?

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# 1 Introduction

## 1.1 History of a holistic cover

The term 'holism' was coined in 1926 by Jan Smuts, a South African statesman, in his book, *Holism and Evolution*. Smuts defined holism as "The tendency in nature to form wholes that are greater than the sum of the parts through creative evolution."

The first construction policy, as we use today, were merely introduced around the same time as Jan Smuts defined Holism, and covered the construction of many infrastructural masterpieces during that time.

Since then the engineering market has developed into a specialized trade and the market demand grows, there were introduced several new coverage extensions which now are widely used in the international markets

Today large construction projects require a lot of different covers and products to cater for and/or fulfil the insurance needs for our clients, contractors, principals or manufacturers: Marine cargo, liability, engineering covers, political risks, terrorism, confiscation risk, credit risk.

The holistic idea behind this development of cover is to merely merge the engineering cover with the other fore mentioned covers to produce a "one policy" cover with no overlap in cover but more important for our clients without any gaps in the total coverage.

## 1.2 Development of the holistic principle in engineering.

Our clients are not anymore only building and constructing large projects. They developed their business further into design, development and long-term operation; some even are getting into financing these projects.

Even if engineering insurance is, in our opinion, still is the core business for insuring a large construction project, it is, from the client's perspective, just included in their growing insurance and risk package.

Extending the scope of our clients businesses will add additional risks into their risk-profiles. Some boundaries between different operations tend to disappear. Borders where traditional covers would stop. Thus creating a new risk-landscape with a totally different profile, not seen before in engineering insurance.

Questions we should ask ourselves are:

- Is engineering insurance the most suitable lead for these wider insurance packages; how much can we stretch an engineering based cover without losing control?
- How engineering lines can use, or merge with, the other product lines: What are these new holistic products or covers?
- Do we as engineering insurance underwriters summon all the skill sets required to underwrite such a rainbow combination of risks?
- Are all the stake holders ready for such a solution aside from clients and brokers – such as loss adjusters, re-insurers, actuaries and regulators?

### 1.3 Drivers, economical, new parties involved.

As mentioned earlier, we are not anymore only insuring a construction company. The scope of business is extending towards a broad area, from the initial finance stage till the full long-term operational stage. Due to the nature of the construction insurance policy, where all parties involved in the building process are insured under the policy, this extension of scope brings in a new group of insured entities and beneficiaries.

Corporates are constantly looking at ways and means to achieve efficiency and drive costs down so that ever rising share holder expectations are constantly met. One of the obvious ways to do it is to look at holistic solutions and drive a price and coverage bargain in the process.

At this moment, the broker is acting as a director to orchestrate these covers at the appropriate price into the desired shape, or custom fit for his client. Preferably he wants to do so without any gaps in the overlapping coverages and with a maximum value for money.

Lenders are a good example of entering a policy and demanding exclusive rights by setting aside any tailor-made cover restrictions or exclusions.

The insurance world is struggling somewhat with these challenges and setting up some standard clauses as a starting point for both the lender and insurers.

### 1.4 Scope of the paper

Due to time and resources restraints, we choose to only look at the traditional engineering construction and/or erection coverage which can be extended with Liability, Professional Indemnity and Marine covers to provide a more than All Risk Coverage for the principal or contractor (sometimes in a consortium).

The paper then reflects on the realisation of these covers and from different perspectives, underwriting, claims, legal etc. and the implications.

With examples of these covers we highlight some actual issues with risk versus cover.

Based on these experiences we draw up some conclusions, recommendations and reflections on some possible future development in respect of extensions and covers.

## 2 Cover extensions

Shortly after the First World War and mainly because of the instability of the currency resulting from the hyperinflation in the fateful crisis year of 1923 the capital goods industry began to look for the most comprehensive insurance protection possible against risks to the calculated earnings of the contracting companies and their suppliers during the construction of the technical facilities. The demand was met by the "erection all risks" insurance (EAR), which was launched on the market by Atlantic-Versicherung and Allianz in 1924 with the support of Munich Re. EAR insurance offered the contractor the benefit of having simple complete cover based on an "all risks" model, encompassing inter alia the risks of fire, explosion, natural hazards, and special risks connected to the nature of assembling.

The first record of insurance specifically for the building structures, "contractors' all risks" insurance (CAR) dated back to 1929, and covered the construction of the Lambert Bridge over the river Thames.

The insurance terms and conditions were derived from EAR insurance, with which the companies had already acquired 10 years of experience.

The basic engineering project policy (CAR/EAR policy) historically provided coverage for the materials which are to be used during construction/erection from the date of uploading to the construction site till the taking over or putting into service.

The engineering policy was made on an “All Risks” basis; however some risks and objects had to be excluded from the coverage. Also the liability policy was not an integral part of the policy.

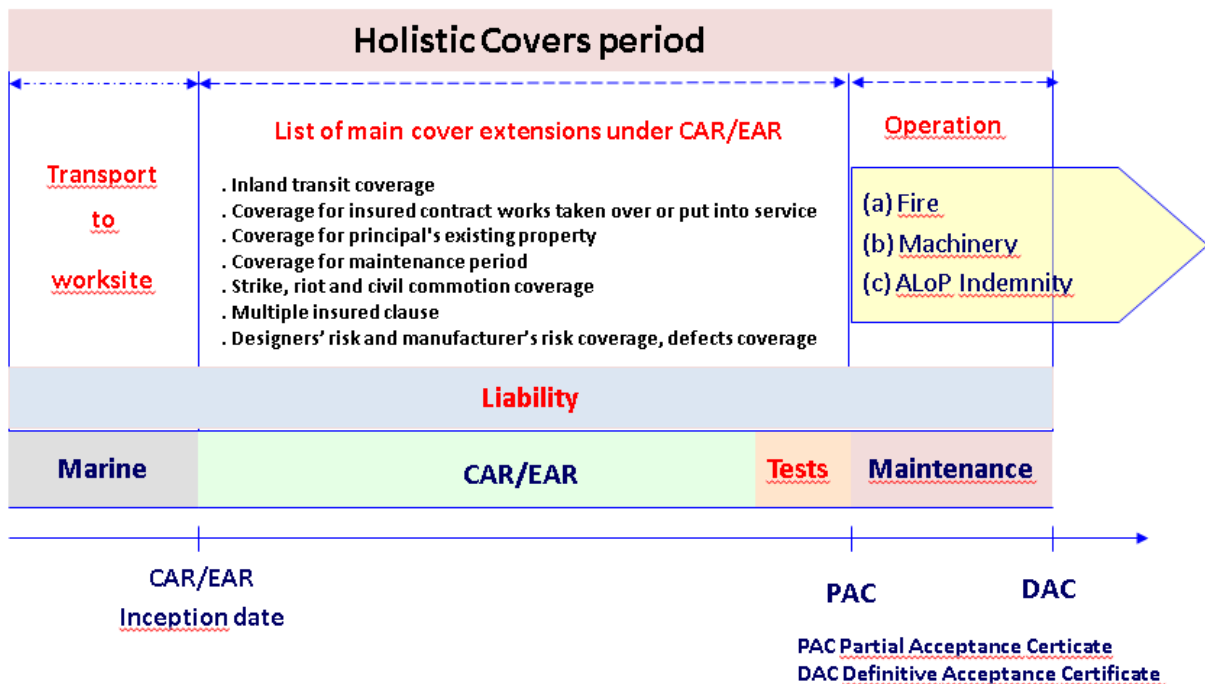
As the market demand changed, several new extensions of coverage were introduced which now are widely used in the international markets. These extensions cover some parts of excluded risks, some additional objects which are not the part of construction/erection project and some additional expenses of the policyholder (principal or contractor).

All these extensions can be classified from the 3 different points of view:

1. Depending on time of the risk appearance (pre-construction phase, construction phase, post construction phase) as shown in the picture below.
2. Depending on nature of exclusions (General Exclusions, exclusion to the Material Damage section, exclusion to the TPL section)
3. Depending on insured objects (additional objects, Delay In Start Up, Construction Machinery and Construction Plant)

## Holistic Covers in Engineering Insurance

### Insurance schedule Overview



The list of policy extensions is shown below. The list is not exhaustive, but consists of the extensions most commonly used on the market.

Depending on time of the risk appearance	<p><b>Pre-construction phase:</b></p> <ul style="list-style-type: none"> <li>- Parts produced and assembled elsewhere.</li> <li>- Inland &amp; marine transit coverage</li> <li>- Property stored elsewhere off-site</li> </ul> <p><b>Construction phase</b></p> <ul style="list-style-type: none"> <li>- Contract Works Taken Over or Put into Service</li> </ul> <p><b>Post construction phase:</b></p> <ul style="list-style-type: none"> <li>- Maintenance visits, Extended visits, guarantee</li> <li>- IDI</li> </ul>
Depending on nature of standard/basic cover and exclusions	<p><b>General</b></p> <ul style="list-style-type: none"> <li>- Strike, Riot and Civil Commotion coverage</li> <li>- Cover for nuclear fuel elements</li> <li>- Multiple insured's clause (Lender's extension)</li> </ul> <p><b>Material damage section</b></p> <ul style="list-style-type: none"> <li>- Designers' risk coverage, manufacturer's risk coverage, defects coverage</li> <li>- Coverage for Principal's Existing Property</li> </ul> <p><b>TPL section</b></p> <ul style="list-style-type: none"> <li>- Cross liability coverage</li> </ul>
Depending on additional insured objects	<ul style="list-style-type: none"> <li>- ALOP (DSU) including Transit &amp; Marine DSU</li> <li>- Overtime, Night Work and Express Freight coverage</li> <li>- Airfreight coverage</li> <li>- Property in Off-Site Storage coverage</li> <li>- Removal of debris</li> <li>- Professional fees coverage</li> </ul>

A further list of the narrative wordings and particularities and a short summary of different coverages see in Chapter 5.

### **3 Handling of these covers from different perspectives**

#### **3.1 Underwriting**

**Holistic covers make more sense from a client/broker's perspective as one underwriter can handle all requirements on a 'single window' basis.**

Over the past several decades, the business of insurance has become progressively specialized and so has engineering insurance. Hence from a broker's or a client's perspective he has to deal with different markets for putting together a comprehensive insurance solution, particularly if insurance solutions for complex infrastructure projects are to be worked out.

As discussed in preceding sections of this paper, the spectrum of coverage that could be seen in holistic coverage situations can be as below:

Design	Political	Construction	Financial	Liability	Employee	Fleet	Transit
Long term PI, Guarantee, Defects Liability risks	Contract frustration, nationalization, expropriation risks	Physical damage risks, breakdown, Natural catastrophes	Loss of potential revenue, liquidated damages, penalties	Third party property damage, injury, automotive liability risks	Workman's compensation personal accident, worker illness and related risks	Motor Vehicles,	Movement of equipment and material related to construction

At the moment, most international markets offer a combination of some of the above covers in association with plain EAR/CAR risk coverage under engineering class of business, but rarely does one find all covers under one roof or in one packaged product.

From a broker's/client's perspective, there is no 'single window' for a comprehensive product offering in respect of large construction projects where there is a genuine demand for one as such. This requires the client/broker to enter into simultaneous discussions/negotiations to put a wholesome insurance package together for the project. Indeed not a very cost and time efficient proposition from their perspective.

Even though it's quite tempting to attempt offering such a holistic product, the challenges are quite enormous from an underwriting perspective.

Quite simply, this requires putting together a wide range of technical skills to understand and underwrite such a solution. For many direct underwriting companies, deploying such resources on a holistic product underwriting may not be cost effective and it could be debatable if such a combined underwriting effort would actually drive home the necessary efficiencies that one hopes to achieve.

Worse still, one could lose the advantage of specialization viz., the specialized underwriters looking at different segments of the risk on a secular basis without being coloured by perspectives of other exposures that may require a totally different approach. For instance, the professional indemnity exposure needs to be looked at from a different risk perspective than the workman's compensation exposure, though both may be addressing the liability exposure involved in the overall project. Markets acquire the requisite perspective, over a considerably period of time, looking at a specific exposure than poring over multiple exposures at the same time.

## 3.2 Wording

### **Wording issues - bundling of coverages vs. in-building or implanting coverages into existing wordings. How to handle them?**

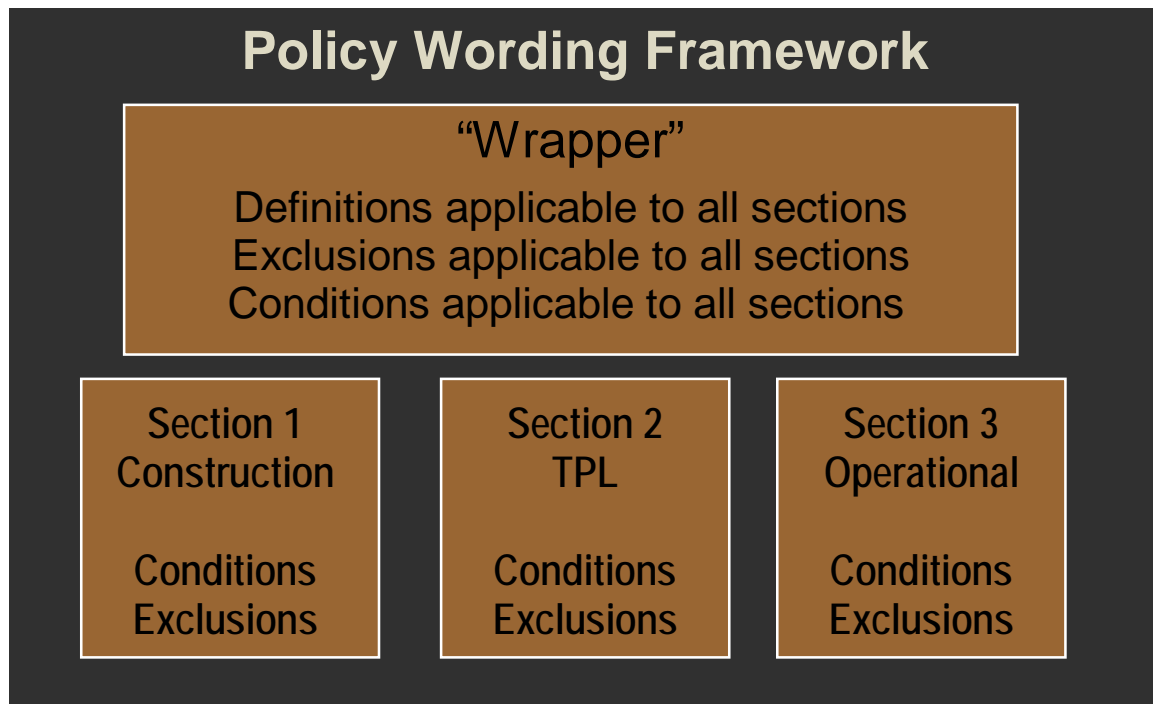
One of the criticisms of insurance documentation is its length and complexity. This problem gets exacerbated, when clauses protecting other insuring parties particularly in project insurance are added - such as lenders and financiers. Often lender's clauses seek to modify the original clauses in the policy wording relating to subrogation, arbitration, loss payment and cancellation, to name a few. Lenders would want to protect their monetary exposure in the project by putting 'iron clad' clauses of their own into the wording.

Due to bundling of covers required to achieve a holistic coverage, combined with the need to satisfy requirements (sometimes conflicting ones!) of various parties involved in a project, it is quite obvious that the wordings can simply get quite complex. The policy conditions and clauses pertaining to different aspects of coverage will have to be harmonized so that there are no contradictions in coverage leading to contract uncertainty. Underwriters may not be willing to 'sacrifice' clauses and conditions that protect them from covers that are not intended to be given or priced for, but at the same time brevity and simplicity of wording must not be lost sight of.

In this context, there can be two approaches to building of holistic coverage's – bundling and implanting.

**Bundling:**

In bundling of coverages, the base forms of various covers such as EAR, Liability, Limited Operational Risk, Defect Liability and the like are bundled together to into a single wording. To achieve savings in wording, one could first devise a broad ‘wrapper’ consisting of general policy terms and conditions and then attach the desired covers based on actual requirements as ‘riders’. The policy wordings in case of limited coverage requirement of the insured will be simpler and shorter, compared to cases where wider coverage is sought. This is illustrated below in the picture.



Claims in respect of the above solution could be clearly identified and broken down into various sections of the policy. The sectional concept also provides flexibility in underwriting and re-insurance, as it is possible for the underwriter to handle the sections individually for such purpose.

**Implanting or joining:**

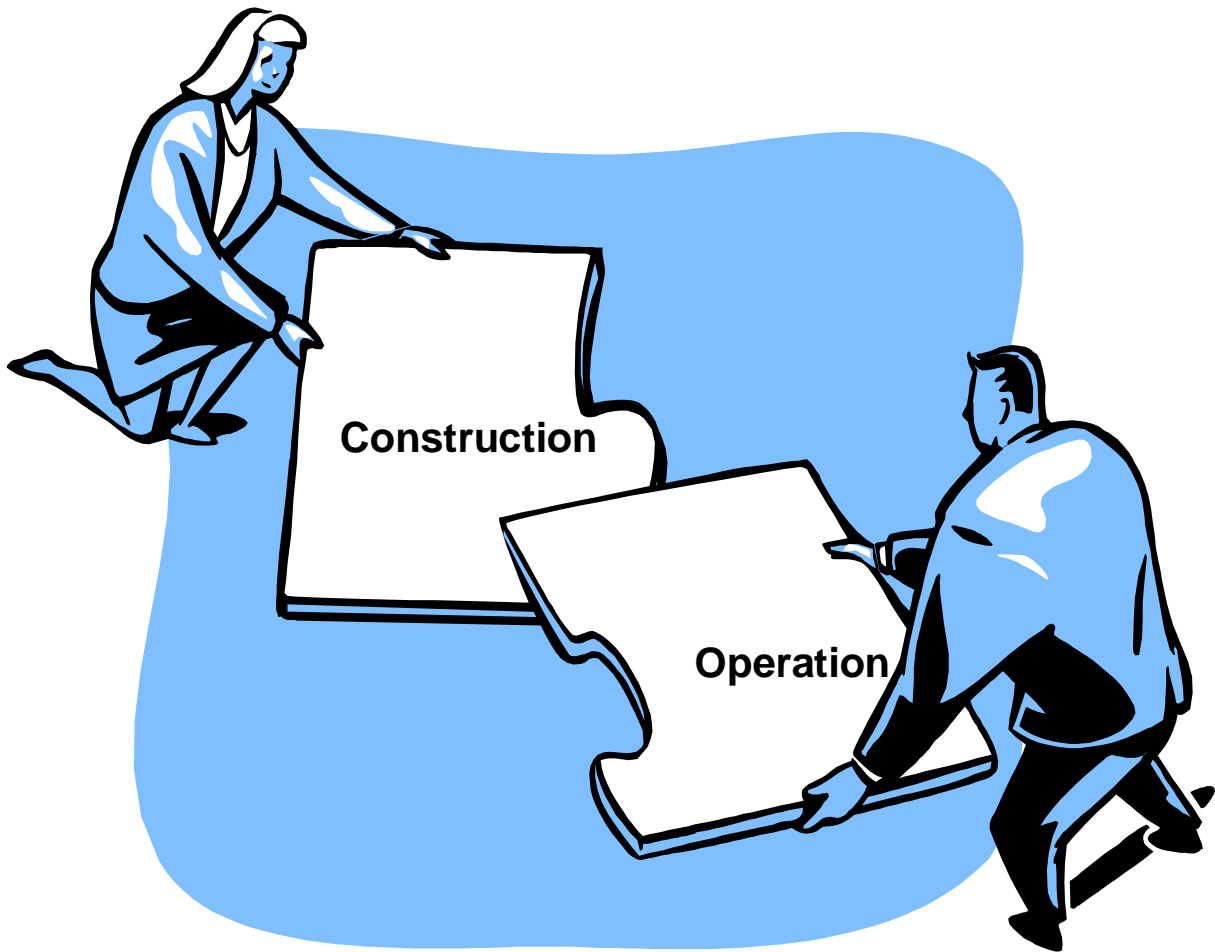
In these cases, specific portions of the policy wording could be amended to reflect the enhanced cover that is being sought. For instance, most EAR policies will mention that the coverage will cease upon units being commissioned and tested. To provide a limited operational cover, the relevant clause in the policy could be modified to the extent that coverage for the operational risk shall continue, until such time certain other milestones are met.

Thus there won't be any need to bundle two separate coverage's, but one of them is implanted or joined with the other to produce a combined coverage. There may not be clearly defined section-wise coverage in the end product.

However in such cases, considerable manuscripting of wordings could result and such effort would call for special skills in contract wording drafting on the part of the underwriter who is doing it. In most such cases, the wordings may not be tested by a lawyer as a standard wording



might be. Wordings could be developed on a case to case basis depending on specific requirements of insured.



The jigsaw puzzle of the wording needs to be completed in full with no missing pieces! Else claims could get compromised due to their falling into such gaps in coverage.

For buying re-insurance, the underwriter will perforce have to arrange protection on a holistic basis unlike the bundled option where sections of coverage are clearly identifiable and capable of being handled separately.

### 3.3 Legal/compliance

**Legal, accounting and regulatory issues in providing holistic coverages beyond traditional coverages - some markets may have line-specific regulatory requirements or product licenses for underwriting.**

Insurance business is subject to strict regulatory oversight in most developed markets and in many emerging markets as well. Regulations have of late become quite onerous in many markets due to financial irregularities, scams and resulting customer complaints. Regulators are expected to be guardians of customer's interest and could be mandated to bring in transparency in business practices for the benefit of end customers of insurance products.

Consequently now a day, regulations tend to cover wide ranging subjects including product design, claims/premium reserving, solvency, accounting and so on. More often than not, these regulations tend to be line of business specific and not general in nature. This militates against

providing holistic covers as underwriters have to marry the requirements of multi-line regulatory requirements before such covers are offered.

From an actuarial perspective, the reserving for premium and claims can be challenging for holistic covers. Most actuarial methods are evolved from a line-specific perspective than from a holistic coverage perspective. Long term policies require different treatment of claims and premium reserving compared to short term covers. For holistic covers with a mix of various coverages - both long term and short term – adequate reserving can be quite demanding an exercise. Statistical models for these could be either absent or the existing ones not entirely suitable for the bundled coverage (Refer IMIA paper on Reserving for Engineering Insurance – WGP 73 (11))

From an accounting perspective, laws and regulations may require that premium and claims need to be recognized on a line specific basis. Since in holistic covers there could be a mix of various covers, underwriters may be required to split the premium line-wise to match the accounting requirements. Like-wise, claims may also need to be apportioned. Hence to meet the requirements of accounting, there is a need to unbundle the premium and claims from 'holistic' engineering policies. Even though this may look quite straight forward on paper, it can be fraught with difficulties in a practical situation.

From a legal perspective, long term engineering insurance covers encompassing property, liability or other exposures added on can pose challenges. For instance, in some geography, there could be legal issues in providing multi-year coverage except for specific cases such as multi-year construction projects. Similarly there could be issues of premium collection such as allowing instalment facility in such cases.

### 3.4 Re-insurance

#### **Re-insurance related issues - traditional re-insurers may not want to stretch coverage beyond classical EAR/CAR coverage.**

Re-insurance arrangements of most direct insurers are in many cases still line-specific both on proportional and non-proportional basis. Due to economies of scale and changing market demands for reinsurance protection there is a movement ongoing towards a broader spectrum and more global coverages. In general a much higher overall retention will apply on these treaty-covers. This development does not mean that reinsurers abandon their knowledge in the specific lines. It will still be possible to get tailor-made reinsurance solutions for these specific lines.

Where re-insurers have been willing to offer multi-line facilities to their cedants, they may tend to limit downside of granting such covers by sub-limiting exposures which are 'non-core' in nature. For instance, the third party liability exposure under an engineering re-insurance treaty may have a sub-limit far lower than the main treaty limit.

Ring fencing of subsidiary exposures by offering limited perils could also be considered by re-insurers. For instance, the triggering peril for CBI could be limited to 'FLEXA' instead of 'All Risks'. Thus the ability of cedants to offer a holistic coverage could be frustrated as he may have to buy additional protection outside of his own re-insurance arrangements to be able to offer such coverage to his insured. The coverage might simply become not cost effective at all in the end.

From a holistic engineering product perspective, one of the most important concerns could be on the potential long tail exposure. This problem could be further accentuated, if liability

exposures such as long term professional indemnity covers are thrown in. Additionally re-insurers have their own reserving concerns similar to those of their cedants. Many infrastructure projects are subject to time overruns, particularly in developing countries, leading to demands from insureds for extension of policy periods much beyond the period that was originally envisaged. This requires both insurers and re-insurers to carry the risks for longer periods than anticipated. Things could get complicated between the two when one party has to move out of the re-insurance arrangement following which the run-off of such long tail covers will have to be managed.

### 3.5 Claims

#### **Claims handling issues - in terms of multi-line coverages being offered and loss adjustment challenges that can arise.**

Traditional structures of insurers and re-insurers have always been oriented towards line-specific loss adjustment requirements and capabilities. Multi-line coverage entailed by holistic covers can result in multiple loss adjustment challenges. One for instance is the lack of clear demarcation between coverages when a loss arises. A loss in the construction works can result in concurrent claims under various covers including liability, advance loss of profits, workmen's compensation etc. It may not be feasible in all cases to clearly demarcate claims across various covers.

Cost of loss adjusting for complex claims is another factor underwriter will have to consider and price for while providing holistic coverage when it is difficult to organize multifarious loss adjusting skills to settle claims. This can impact the cost effectiveness of such holistic covers.

Another consideration to be given is the distinction to be made between first party and third party losses. Whereas the former is a matter of loss adjustment involving the insurer and insured, the latter involves establishment of a legal liability in a court of law. When a losses impinging on various covers are involved, loss adjustment strategy of the insurer should take due consideration of the above distinction. What could have been a straight forward settlement in a plain vanilla coverage could be rendered complex in a multi-line coverage.

A concurrent aspect which needs to be noted is that there could be regulatory impact on loss adjuster deployment in losses. Loss adjusters may have accreditation to do line of business specific cases but may not have capability or necessary official mandate to do multi-line assessments. The loss adjustment skills required for a construction claim could be entirely different for a property claim and vice versa.

## **4 Conclusions and future recommendations**

### 4.1 Conclusions

Insurance is about taking over risks, mainly risks that we understand and can size. To what extent can we understand and size the risks we intend to take into the holistic (engineering) cover? And by doing so, do we introduce any unknown risks into the cover?

The engineering market is a community of Engineering Underwriters, Risk engineers, Claims handlers, Loss adjusters etc. mostly with a technical background and with a lot of experience in engineering. Extending covers to holistic proportions we introduce new challenges into the engineering market.

The simple example of a basic construction cover with, on one end the DSU cover and on the other side the marine transport cover extension, implies that when a marine damage occurs it already can trigger the DSU.

Just take the list of common cover extensions in chapter 5 and 6 and combine them in one single basic policy. You will be surprised what weird and wide covers you can compose. It takes time and some experience to sort out the really weird one's but you never sure if they are that weird and thus are unlikely to happen.

The question is, if the interaction between these multiple risks is or can be incorporated in the total risk evaluation by the (engineering) underwriter.

A similar situation occurs when liability covers are taken in. Does an engineering underwriter have enough experience in the field of liability so that he can judge the consequences of the liability cover extensions?

In other words; how much can we stretch an engineering based cover without losing control.

And it is not only underwriting that is effected, legal, claims and even re-insurance should be taken into account when composing holistic covers.

### 4.2 Recommendations

At this moment the needs of his customer, the insured, are met by placing all the necessary covers in the client's insurance basket. According to his client insurance needs and market conditions brokers are searching for the suppliers (insurers) who are capable of supplying the whole basket at once. With the most value for money solutions to put in the basket.

The paper's advice to underwriters is not to avoid the covers that are based on the holistic idea but to split holistic covers in the risk and underwriting process into understandable pieces, into piece(s) the underwriter is familiar with.

The underwriter must understand the inter-linkages between various covers in the policy and ensure that the solution presented to the client addresses all coverage issues without any gaps in coverage. The holistic solution should be need driven and not simply, because it would be fashionable to do so in a competitive market place.

On the parts of cover were underwriters are lacking experience involve colleagues who are more experienced in that field. Underwriters must have discussions with these colleagues about the interaction of covers and the possible accumulation.

A holistic cover requires input not only from the underwriting community, legal and claims should be prepared for the more complex and wide range of challenges that they will face when dealing with these covers. The coverage should not be antagonistic to any legal or regulatory requirement which can potentially cause problems at a later stage.

The coverage should be run over a manageable time horizon to avoid long tail exposures that are unintended at the time of underwriting.

The lessons learned from past experiences and from other branches will be valuable information to take holistic covers a further step ahead.

### 4.3 Future development

For the future our engineering covers will be more and more holistic due to the economies of scale, the insured who wishes to have a cover that has no exclusions, neither in time, nor in coverage. A development that will not be stopped and where the most developed markets will be in the lead. As long as we as insurers understand what they insure it is not an issue.

Since we all agree that the knowledge and understanding of engineering is still the backbone of an engineering based insurance product we need to take action.

Engineering insurers should stay heavily involved in the development of holistic covers and alike.

Focusing on the engineering part of the risk and respective cover and also remain in control over the non-engineering parts of the holistic covers.

One might think of special teams composing and handling these holistic covers. It would be paramount that communication within these teams is crucial for the success.

If engineering insurers do not do so someone else will take over.

## 5 List of cover extensions

### 5.1 Inland transit coverage

This coverage often gives the opportunity to cover losses which are normally covered under inland cargo policies with the appropriate limit. The following wording may be used:

“Material damage Section of the Policy is extended to cover loss of or damage to locally supplied property insured whilst in transit to the contract site other than on waterway or by air within the territorial limits of the project region and provided that the insured property is suitably packed and/or prepared for transit which shall also be deemed to include stowage”.

Underwriters usually use a limit per conveyance as a coverage limit.

### 5.2 Coverage for insured contract works taken over or put into service

For some risks (e.g. for projects consisting of several buildings) this coverage may be needed.

The situation may be the following: one building is completed and taken over by the Principal, but it can catch fire from the adjacent building which is still under construction. Then the following coverage can be provided:

“The insurance shall be extended to cover loss of or damage to parts of the insured contract works taken over or put into service if such loss or damage emanates from the construction of the items insured under Material Damage Section and happens during the period of cover”.

### 5.3 Coverage for principal's existing property

The similar situation can occur where the insured construction works are the extension of the Employer existing property. Existing property can suffer severe damage because of works and it is not normally covered under the standard coverage. In this case the cover can be extended to cover solely the loss to existing property caused by insured contract works. The following assumptions are usually taken into account:

- Damage could not reasonably have been foreseen by the principal/contractor
- No consequential damage should be covered
- Coverage should not be granted after completion (as it should be property insurance)
- Construction and erection equipment shall be excluded (as it is insured separately)
- Not covered under the ALOP Section

The following wording of the extension (Munich Re Endorsement 119)<sup>1</sup> could be used:

“It is agreed and understood that otherwise subject to the terms, exclusions, provisions and conditions contained in the Policy or endorsed thereon and subject to the Insured having paid the agreed extra premium, Section I of this insurance shall be extended to cover loss or damage to the Principal's existing property or property belonging to or held in care, custody or control by the Insured caused by or arising out of construction or erection of the items insured under Section I.

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<sup>1</sup>[www.munichre.com](http://www.munichre.com)

Insured property:

Sum insured:

The Insurers will only indemnify the Insured for loss of or damage to the insured property provided that prior to the commencement of construction its condition is sound and the necessary safety measures have been taken. In respect of loss or damage caused by vibration or by the removal or weakening of support Insurers will only indemnify the Insured for loss or damage as a result of a total or partial collapse of the insured property, and not for superficial damage which neither impairs the stability of the insured property nor endangers its users”.

The Insurers will not indemnify the Insured for

- Loss or damage which is foreseeable having regard to the nature of the construction work or the manner of its execution,
- the costs of loss prevention or minimization measures which become necessary during the period of insurance”.

#### 5.4 Coverage for maintenance period:

Basically the coverage for construction works stops when the works are finished and taken over by the Principal. But according to the provisions of the construction contract, the contractor provides the quality guarantee to rectify any damage caused by his works or materials used. The period of guarantee can vary 3 to 36 month, depending on the project. Of course contractors seek the insurance coverage for such risks. Although there are some variations, there are 4 main common types of cover during the maintenance period<sup>2</sup>:

- No maintenance cover
- Visits only cover: for loss or damage caused during return visits to suit for maintenance
- Limited (or Extended) cover: as Visits only cover, but also including loss or damage as a result of a defects introduced during construction
- Guarantee cover: as Limited (or Extended) cover, but also including loss or damage as a result of defects in design or manufacture.

There is also a separate insurance product (IDI insurance– Inherent defect insurance) for the commissioned objects for the period which begins from the taking over by the Principal and lasts for 10 years after, which covers the loss caused by the inherent (latent) defect. This coverage is described in more details below.

#### 5.5 Strike, riot and civil commotion coverage

All war and warlike events are normally excluded from any property and engineering policy as per requirements of the national legislation. But civil commotion, if it is not amount a popular uprising can be covered. For example, Policy shall be extended to cover loss or damage due to strike, riot and civil commotion which means loss of or damage to the property insured directly caused by:

1. The act of any person taking part together with others in any disturbances of the public peace.

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<sup>2</sup>Construction Insurance. The Chartered Insurance institute, 1999/page 152-153

2. The action of any lawfully constituted authority in suppressing or attempting to suppress any such disturbance or in minimizing the consequences of any such disturbance.
3. the wilful act of any striker or locked-out worker done in furtherance of a strike or in resistance to a lock-out,
4. The action of any lawfully constituted authority in preventing or attempting to prevent any such act or in minimizing the consequences of any such act.

## 5.6 Multiple insured clause

Requested when several insured parties are included in the policy, especially lenders.

Insurers recognize that in some circumstances "The Insured" may comprise more than one insured party. Each party with a differing extent of interest in the subject matter insured. And each party can commit a Vitiating Act. In cases of Vitiating Act of the Insured the insurers are entitled to avoid liability and thus refuse to meet any claim by the party which commits a Vitiating Act. But the claim should be payable to other parties which have not committed the Vitiating Act. The insurers may claim damages against the party which commits a Vitiating Act

Vitiating Act is defined as one or more of the following:

- Fraud
- Misrepresentation
- Non-Disclosure
- Breach of Warranty
- Breach of Condition

## 5.7 Designers' risk coverage, manufacturer's risk coverage, defects coverage

Describing design errors is a very extensive and complex matter. It is very important here firstly to introduce the definitions of "defect" and "damage", the difference of them and also to differentiate between "defects cover" for building and civil engineering projects and for mechanical and electrical engineering projects.

To cut a long story short: A defect is a condition and damage is an occurrence. Property can be defective (i.e. in defective condition), without being damaged in the usual insurance sense by an occurrence that happened at the insured place and time. And this is the main issue with the defects cover. Another important part here is consequential loss. A relatively minor defect can result in fire, explosion or collapse with catastrophic consequences.

In general, defects can be considered as being attributable either to design, specification, material or workmanship. Historically, insurers insisted on the total exclusion of all four types of defects, as the costs of remedying such defects is perceived to be a commercial risk. As the principals and insured contractors felt uneasy with this total exclusion and argued that there are certain good reasons to widen the coverage (i.a. the contractor could get insolvent due to unexpected high repair costs), Insurers, following due consideration of the case, may be ready - to a limited extent - to provide coverage as expressed via the following standard exclusions that imply different levels of coverage:



- DE1 - total (outright) exclusion,
- DE2 - extended defective condition exclusion,
- DE3 - limited defective condition exclusion,
- DE4 - defective part exclusion,
- DE5 – design improvement exclusion.

Or

- LEG 1- outright defects exclusion,
- LEG 2 - consequences defects exclusion,
- LEG 3 – improvements defects exclusion.

### 5.8 Delay in start-up (Advanced loss of profits)

Loss or damage to the insured works may result in delay in completion of the project and financial loss to the contracting parties as the employer will lose anticipated gross profit from the scheduled completion date, which includes ongoing overheads and interest on money to finance the work. The employer may wish to insure this risk. Requirements for this insurance commonly referred to as advanced loss of profits insurance or Delay in Start-up insurance has increased as more projects are privately funded. This cover is arranged in conjunction with material damage coverage and is fully described in other IMIA publications

### 5.9 Cover of extra charges for overtime, night work, public holidays, express freight

Sometimes to avoid or minimize the loss of gross profit is recommendable to accelerate the reconstruction of the damaged construction works or to use the express freight (airfreight). These covers are widely used in the market. In this case the insurance is extended to cover extra charges for overtime, night work, work on public holidays and express freight (or airfreight).

Provided always that such extra charges shall be incurred in connection with any loss of or damage to the insured items recoverable under the Policy. Of course it is recommendable that such additional charges should be limited.

### 5.10 Professional fees

An amount included in the Sum Insured in respect of: architects', surveyors' and other professional fees, which may be necessary for the reinstatement of the contract works. The costs are not for preparing claims. The amount payable shall be according to the regulated scales.

## 6 Other “far off” & exotic extensions

### 6.1 Bankruptcy

More a financial coverage based coverage sometimes packaged together with a limited guarantee insurance or limited machinery breakdown in addition to an extended maintenance contract of a supplier. When the supplier goes into bankruptcy the limitations will be waived since the extended maintenance contract of the supplier is not for in force anymore.

Another possibility for the owner / developer of a project to demand a bond from the contractor for an advanced payment the contractor receives before he has done any work. This bond can be seen as an insurance against bankruptcy of the contractor

### 6.2 Stand still cover

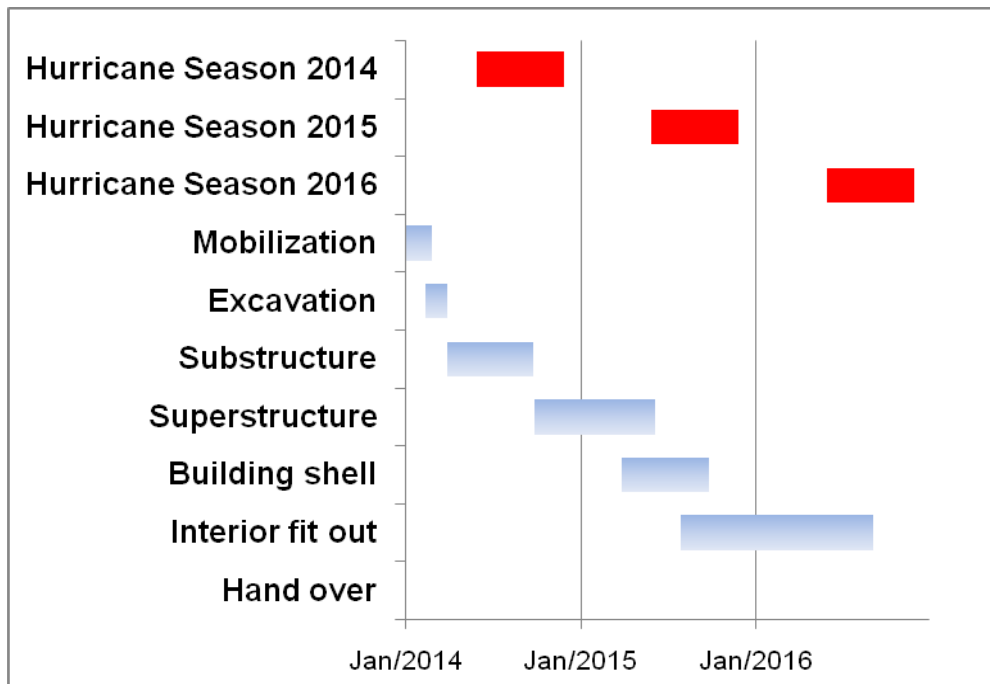
Source Swiss re publication

There are many reasons for a project to come to a halt, however, this is not the topic of this paper.

Project policies generally require the insured to notify the insurers of cessations of work lasting longer than a certain period of time (e.g. 4 weeks). Very often this terminates the project’s insurance cover, because the stand still causes the material change in risk this.

Depending on the construction phase (e.g. a building consists of substructure, superstructure, building shell, interior fit out) the project’s value at risk and vulnerability varies. Examples:

- a building which is not fully enclosed is very susceptible to losses during the rainy season or hurricane season



- a building shortly before completion has a higher exposure to fire than a building during the substructure works

- a road without asphalt is very susceptible to flood.

While the risks of operating a site disappear during a stand still period, other hazards remain. The main exposures during standstill are water, fire, burglary and malicious damage. Due to the reduced or even non-existent workforce / security personnel on site the mitigation of these exposures is hampered. We therefore would recommend to only offering named perils cover and insist on the site being assessed.

In order to determine standstill terms and conditions as well as pricing, the condition of the following issues on site must be assessed (source Swiss Re Standstill covers):

- Stage of completion, in percent
- Interruption during critical phase, e.g. semi-completed steel tank erection, curtain wall assembly, retaining wall construction?
- Comparison of planned to actual progress
- Estimated value of completed portion(s)
- Stage of substructure works
- Water exposure, e.g. ground water, distance to bodies of water, surface water, heavy rainfall
- Drainage facilities (availability and maintenance)
- Windstorm exposure, e.g. semi-completed curtain walls, condition of scaffolding, safety nets
- Fire exposure (fire load of uncompleted structure, storage or accumulation of combustible or explosive material, e.g. timber, plastics, chemicals)
- Fire protection and fire-fighting facilities
- Exposure to theft or burglary (site fencing, security staff)
- Third-party exposure (adjacent property, objects falling from site, prohibited access)
- Storage of material or equipment, e.g. location, size, locking, access control, wear and tear, corrosion.

### 6.3 Liquidated damages

Liquidated damages are penalties the contractor has to pay in case he delivers the works too late or not in the quality required.

By default this is an entrepreneurial risks and not insurable.

With that being said there are products available to insure liquidated damages for delay and performance.

In engineering, liquidated damages are frequently laid down for failure to comply with agreed technical specifications or delayed commissioning. In the course of a financial year, they can mount up to a substantial sum that cannot be budgeted for in advance. Whilst it is the contractor's job to build within the agreed timelines and to the agreed performance requirements, he faces many project risks that are beyond his control. Examples:

- If a project suffers major delays due to an important component being damaged due to the failure of key suppliers, the company is likely to incur substantial liquidated damages.

- Faults in the design can result in the guaranteed performance not being achieved. If the faults cannot be remedied prior to the final acceptance of the equipment, heavy liquidated damages for underperformance may be payable by the manufacturer.

A coverage model is to protect the contractor against heavy liquidated damages that might pose a threat to his solvency. This can be done by analysing the contractor's projects and liability to pay liquidated damages, identify the most dangerous sources of risk and design cover to limit the contractor's risk. Projects are not insured individually, but cover is provided for liabilities under all projects for each financial year.

## 6.4 CBI

With the globalization of economic relations and worldwide production and logistics networking, interruptions in global production and supply chains are acquiring increasing importance with respect to risk management and risk assessment. The earthquake that struck Japan in March 2011 or the devastating floods in Thailand in November/December 2011 focused renewed attention on supply chain interruption following major Cat Nat events and demonstrated the vulnerability of global interlinked production.

Property damage insurance provides cover against financial losses arising from physical loss of or physical damage to insured property caused by the impact of an insured peril. BI insurance provides cover for consequential losses arising from such insured physical loss or damage. The principle that a cover for consequential losses applies only in cases where property has been lost or damaged must also hold for CBI covers.

According to Munich Re property guidelines Contingent Business Interruption (CBI) provides cover for:

- Suppliers'/Customers' extension  
This type of cover provides protection against loss of profits resulting from necessary interruption of business of the insured caused by insured physical damage to property of any supplier/customer of goods or services which results in the inability of such supplier/customer to supply an insured location or to take delivery of goods.
- Utility failure/Service interruption/Public utilities  
This type of cover provides protection against loss of profits resulting from necessary interruption of business of the insured caused by insured physical damage to property at any generating plant, power house, etc. not located on the insured's premises, including transmission and distribution (T&D) lines, which furnishes electricity to the insured location. This cover also applies analogously to the failure of other utilities such as gas, water or telecommunications services.
- Denial of access/Ingress, egress  
This type of cover provides protection against loss of profits resulting from necessary interruption of business of the insured while access to an insured location is denied or not possible as result of insured physical damage in the vicinity of the insured location

Suppliers/customers extension

- Utility failure
- Denial of access
- Loss of attraction

## 6.5 Lack of performance

Typically a contractor has to fulfil the project's specification which may comprise the schedule output, e.g. of tons of steel per year in a steel mill or MWh for a power plant. If this particular output cannot be delivered, the contractor is held responsible to rectify the works until the output is reached. This can create a great strain of the contractor's balance sheet.

A standard Delay in Start-up (DSU) coverage would not pick this up as this would require a property damage as a trigger. In addition in a typical CAR or EAR wording lack of performance is excluded under

*“Consequential loss means any financial loss of any kind or description whatsoever, including loss of profit, loss of opportunity, losses due to delay, **lack of performance**, loss of contract or penalties.”* (Munich Re CPI form)

A solution would be to offer a performance guarantee which to our knowledge is not available for project business so far, simply because every project is by definition unique and has a certain prototypical character. Where performance guarantee products are available these are for proven products manufactured in a controlled environment like photovoltaic elements. The energy output of these can be covered e.g. “Performance guarantee for photovoltaic elements” (Munich Re).

## 6.6 IDI (France)

Inherent Defects Insurance (IDI or as it is more commonly called in France: Decennial Insurance) in the French market is a compulsory insurance for commercial and private developments beginning with the final handover of the beginning and lasting 10 years. There are two main specifics which make the French decennial business challenging

- No deductible
- Cover for “unfit for its intended purpose” which is covering non-physical damage!

The absence of a deductible has led to an average of 270'000 claims per year, with 90% of them being smaller than 5'000 Euro (source Munich Re). This enormous amount has led re-insurers to only offer XS-of loss treaties for decennial business.

- Examples for claim “unfit for its intended purpose” would be (Source HWI France – Guide to Decennial Liability):
- inadequate sound-proofing in dwellings
- inadequate insulation against excessive solar heat on glass façade buildings, inadequate air-conditioning in badly insulated office buildings
- inadequate number of lifts in an office building
- inadequate emergency ingress/egress facilities

## 7 Examples in the market

### 7.1 Combined project and operational insurance

#### The insured

The insured is a well-diversified infrastructure & industrial conglomerate with an annual turnover of USD 1 Billion. The Group has made its presence in various sectors like hydro power, cement, hospitality, real estate & educational institutions. The real estate arm of the Group has been creating lifestyle experiences from building golf-centric premium residences to building mega townships and building a self-sustained mega city.



#### The Project

Development of residential and commercial projects and was launched in 2010. Spread across 1162 acres. Construction of commercial and residential building Up to G+40 Storeys is envisaged along with associated infrastructure like schools, hospitals, shopping, commercial establishments, sports complexes, gold course etc.

#### The Coverage

Difficulty with client was that he was not in a position to declare SI on completed assets basis and also differentiate between property completed and under construction. Since phased handover of completed residences was involved, he desired a seamless coverage of both assets under construction as well as under operation.

At any given point of time under the policy there would thus be two portions of SI – one reflecting the value under construction and the other under operation, both subject to adjustment every year depending on actual values reported at the end of the year.

Thus coverage combines both construction risk as well as operational risk under a single policy. This was for the client the holistic advantage, no switch from one policy to another, no chance that there could start a discussion about the moment of takeover of the risk.

#### Sum insured

Year	Sum Insured for property under construction (USD \$ Mio)	Sum Insured for property under Operation (USD \$ Mio)
2010-2011	50	250
2011-2012	300	300
2012-2013	650	200

## 7.2 Combined project and construction risk policy for a power project

### Insured

Insured is an Independent Power Producer engaged in erection of a large coal based thermal power plant combining several TG sets of 600 MW capacity. They are sourcing equipment from all over the world and have engaged various contractors and sub-contractors.



### Uniqueness of Coverage

The coverage envisages smooth transition from Project Stage to Operational Stage on a seamless basis. Hence the coverage offered is a combination of both Project and Operational Phase, with coverage shifting from comprehensive project insurance to operational material damage policy once the unit are commissioned and the operational assets now continues to be covered in same policy.

### Insurance Cover

Comprehensive Project Insurance + Advance Loss of Profit (Debt servicing costs only)  
Operational Material Damage Including Machinery Breakdown + Business interruption including Machinery Breakdown loss of profits.

### Wording for all sections:

Combination of MR CPI and CMI wording. Multi-section policy.

### Period of Insurance

#### Project

Project Erection Period: 40 months including 3 months testing period, extendable depending on actual execution parameters

#### Operational

**From:** COD of each individual unit/s along with its auxiliaries and BOP facilities,

**To:** Twelve months after the COD of the last unit

**Indemnity Period** under Advance Loss of Profit and Operational Business Interruption- 12 Months

### Total Sum Insured

Project Phase US \$ 4 Billion (US \$ 3.5 Billion Million for Project material damage and US \$ 500 Million for ALOP).

## 8 Appendix

- Examples-list of available wordings/clauses extensions Munich Re [MV1]

MR Endorsement list for the Erection all risk Insurance EAR

<b>D – 2 Endorsements</b>	
001	Strike, Riot and Civil Commotion
002	Cross Liability
003	Maintenance Visits
004	Extended Maintenance
005	Time Schedule
006	Overtime, Night Work and Express Freight
007	Airfreight
008	Structures in Earthquake Zones
009	Exclusion of Earthquake
010	Exclusion of Flood and Inundation
011	Serial Losses
012	Exclusion of Windstorm
013	Off-Site Storage
200	Manufacturer's Risk
201	Guarantee
202	Construction/Erection Machinery
203	Used Machinery
204	Hydrocarbon Processing Industries 1
205	Hydrocarbon Processing Industries 2
206	Fire-Fighting Facilities
207	Camps and Stores
208	Underground Cables and Pipes
209	Crops, Forests and Cultures
211	Nuclear Fuel Elements
212	Decontamination
213	Reactor Pressure Vessel with Internals
214	Subsidence
217	Open Trenches during Laying of Pipelines, Ducts and Cables
218	Leak Search Costs when Laying Pipelines
219	Horizontal Directional Drilling of Pipeline Routes
220	Inland Transit
221	Safety Measures with Respect to Inundation
222	Exclusion of Horizontal Directional Drilling



Münchener Rück  
Munich Re



Munich Re list of endorsements for Contractor's All risk Insurance - CA

**Endorsements**

- 
- 001 Strike, riot and civil commotion
  - 002 Cross liability
  - 003 Maintenance visits
  - 004 Extended maintenance
  - 005 Construction and/or erection time schedule
  - 006 Overtime, night work, night work on public holidays and express freight
  - 007 Extra charges for airfreight
  - 008 Structures in earthquake zones
  - 009 Earthquake
  - 010 Flood and inundation
  - 012 Windstorm or wind-related water damage
  - 013 Property in off-site storage
  
  - 100 Testing of machinery and installations
  - 101 Tunnels, galleries, temporary or permanent subsurface structures or installations
  - 102 Underground cables, pipes and other facilities
  - 103 Crops, forests and cultures
  - 104 Dams and water reservoirs
  - 106 Sections
  - 107 Camps and stores
  - 108 Construction plant, equipment and machinery
  - 109 Construction material
  - 110 Safety measures with respect to precipitation, flood and inundation
  - 111 Removal of debris from landslides
  - 112 Fire-fighting facilities and fire safety on construction sites
  - 113 Inland transit
  - 114 Serial losses
  - 115 Designer's risk
  - 116 Contract works taken over or put into service
  - 117 Laying water supply and sewer pipes
  - 118 Drilling work for water wells
  - 119 Existing property
  - 120 Vibration, removal or weakening of support
  - 121 Piling foundation and retaining wall works

Munich Re list of endorsements for Comprehensive Project Insurance - CPI

<b>Comprehensive project (CP) insurance – Endorsements</b>		
<b>Special insurance covers</b>		
1200	Strike, riot and civil commotion	
1201	Extra costs for airfreight	
1202	Property insured taken into use or operation	
1203	Liability consequent upon vibration, removal or weakening of support	
1204	Guarantee maintenance	
1205	Nuclear fuel elements	
1206	Costs of decontamination	
1207	Reactor pressure vessels with internals	
1208	Costs for leak search	
1209	Oil, gas and/or geothermal drilling rigs and equipment	
1210	Delay in start-up following marine cargo	
<b>Special exclusions</b>		
1230	Earthquake	
1231	Flood or inundation	
1232	Windstorm	
1233	Crops, forests and cultures	
1234	Dams and water reservoirs	
1235	Removal of debris	
1236	Directional drilling	
1237	Drilling rigs and equipment	
1238	Piling, foundation and retaining wall construction work	
1239	Outright defects exclusion	
1240	Outright faulty design exclusion	
1241	Defective part only exclusion	
1242	Tunnels, galleries and underground structures	
1243	Normal action of the sea	
1244	Marine and off-shore work	
1245	Hydrocarbon processing industries 1	
1246	Hydrocarbon processing industries 2	
1247	Limited cover during the defects liability period	
1248	Section lengths	
1249	Betterment	
1250	Exclusion during the defects liability period	
<b>Special conditions</b>		
1260	Contract time schedule	
1261	Structures in earthquake zones	
1262	Underground services	
1263	Fire protection	
1264	Open trenches, pipes, cables and ducts	
1265	Loss prevention in respect of flood and inundation	
1266	Directional drilling	
1267	Serial losses	
1268	Erection of storage tanks	
1269	Marine 50/50 loss sharing	
1270	Flue gas purification plants	
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