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Promat concern for technical excellence and fire safety continues to be human friendly and deliberately people oriented. In this issue...

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Microtherm employs principles of nanotechnology to optimise performance of space age high temperature insulation materials.

Promat In New Synergy With HTI Specialist Microtherm

Our economies are increasingly reliant on non renewable energy as we count its upstream and downstream costs.

There is enormous pressure on industries of all shapes, sizes and economies of scale to be more energy and thermal efficient, and certainly to be much more aware of their contributions to heating and cooling of the built environment.

The collective onus is now squarely on better corporate citizenship — both at an individual and collective level — and to encourage ownership of effective corporate social responsibility programmes.

It is therefore very reassuring to see a hip and perceptive slogan realistically summarising and promoting solutions to many of today's challenges in the world of global warming and climate change.

Cool Answers To Hot Problems

In industries that measure the impact and cost benefits of heating and cooling in milliseconds and mere fractions of degrees, Microtherm's highly memorable “Cool Answers To Hot Problems” slogan also characterises a business model and a successful business strategy that are global in scale and ambition.

Microtherm is the new Etex Group acquisition and synergy partner for Promat. It is focused on bringing the many advantages and benefits of nanotechnology to high temperature insulation (HTI), a business that is close to Promat's heart of Best Insulation Performance.

In fact, “Cool Answers To Hot Problems” speaks very clearly indeed — in measured, carefully articulated and precise scientific tones — for Microtherm's ready, willing and able approach to making our increasingly complex industrial world a cooler and better place in which to live and work.



Left: A recent demonstration of MICROTHERM® Overstitched on cross over pipes in their Nagoya factory

Space Saving HTI Solutions

First established in the United Kingdom with a 1965 patent for the original Microtherm formulation, the young and progressive company — then at the cutting edge of space age technology for insulation applications — expanded cautiously but steadily.

In the early 1970s it started business activities in Sint-Niklaas, Belgium and then in 1984 commenced operations at Nippon Microtherm Tokyo-Yokkaichi. 1990 witnessed the start-up of Microtherm Inc Alcoa in the USA. In 2000 the Microtherm Group consolidated its Sint-Niklaas site as global headquarters. In 2010 Microtherm was acquired by Etex Group.

» Continued on next page

» Continued from front page

Today Microtherm has production facilities in Europe and Japan. Its network of international marketing and sales offices are represented in most of the world's major commercial centres. However, it is the Microtherm company in Japan that has special affinity for Promat Asia Pacific organisation and the Asia Pacific region we call home.

Acknowledging the synergies and considerable commercial business opportunities of working with other hi tech companies in what was then the second largest economy and still is one of the most intensely industrial economies in the world, the Belgium company expanded its ultramodern production facility at Nippon Microtherm Co Ltd in Nagoya, Japan in the early years of this new millennium.

Many Flexible Solutions Benefit Numerous Industries

Microtherm and its space saving HTI solutions are recognised by customers in aerospace, petrochem, transportation, power generation and many other industries where space and performance are both at a premium. The company's strengths are real customer and market driven strategies, "bespoke" or tailor made solutions that focus on creating added value and a complete "Idea2Installation" service. The company has a wide range of microporous insulation and it aims to optimise awareness for environmental, health and safety issues at all levels of its activities.

Microtherm products include rigid and flexible panels, block and moulded products, and machined and powder products. These remarkably thin systems usually save considerable space and still deliver extraordinary insulation performance characteristics.

Commonalities Reinforced After Tragedies

Given their unique and common bond with delivering best insulation performance, the timely and strategic alliance partnership between Microtherm and Promat is understandably considered an unusually good business fit. Both leverage each others strengths and it is a win-win situation for both companies going forward.

In fact, the two partner companies have quickly established an intensely focused and dedicated working relationship. The recent Microtherm invitation to the Promat Asia Pacific technical and HTI teams to visit their Nagoya factory (pictured at right) for in-depth Microtherm product and system training is not only a reflection of unusual synergy but of complementary strategies and likely success in the future.



We are especially reassured to report that our colleagues at Microtherm in Nagoya are unaffected by the recent earthquake and tsunami tragedies. They are dedicated and committed to their country's rebuilding efforts and we at Promat are ready to do what we can to assist.



New Titles To Promote Your Marketing Strategies, Now Available From Promat!



Above, MICROTHERM® Overstitched insulation on the horizontal cross over pipe section of the ExxonMobil refinery furnaces

Microtherm Nanotechnology HTI Solutions Employed At Leading Petrochem Complex In Singapore



Jurong Island is home to many petrochemical companies in Singapore

Location
ExxonMobil Refinery,
Jurong Island, Singapore

Project
Cross over pipes for all
seven furnaces

Main products
MICROTHERM® Overstitched,
MICROTHERM® MPS

Contractors
Mitsui Engineering &
Shipbuilding Co Ltd,
Heptagon Industries Pte Ltd

The way in which our current calendar year started — bitterly cold northern winters, widespread floods, powerful earthquakes and devastating tsunamis — is a timely reminder that Mother Nature always controls the keys to mankind's ultimate success, in virtually everything we do.

We also need to constantly remind ourselves that Promat's commitment to sustainability and the built environment is not a clever marketing gimmick but a very real commitment to the continuing application of technical excellence in the pursuit of better fire safety and security for our markets and, most importantly, to our communities and children of tomorrow.

As a matter of fact, I am totally convinced that as enlightened, intelligent and educated individuals and, equally important as a successful technology, market and profit driven company, we must not only review regularly but also continually expand this commitment to the environment.

Care for our people and continual vigilance of the constant process of change work hand in glove and are, in the final analysis, the basic building blocks of long term survivability. Progress at virtually every level of business simply won't happen by itself. It needs accumulated wisdom and we need to be proactive.

In this issue of PTT — our sixth and something like our 30th consecutive biannual regular corporate newsletter over the past 13 years — we read plenty of evidence of the direct links between Promat technical excellence and ecological awareness for green sustainability.

We start with a cover page report on our new carbon reduction partners at Nippon Microtherm and then the new strategies required for effective fire risk management

in high rise buildings. Product and system news looks at Promat involvement in the prestigious Hong Kong Tamar redevelopment project, applications in a Malaysian solar wafer plant and fire resistant spray protection in a remarkably futuristic 14,000-seat sports and events arena in Australia.

While the unusually high level of resilience demonstrated by most economies in the region augers well for immediate future growth — most continue to do much better than forecast by dint of sheer hard work

— it is also very reassuring to see that Promat Asia Pacific is in the hands of a very solid team of professional business people and, above all, equally solid and hardworking Promat team players.

Last but not least, this is my last edition of PTT and I would like to take this opportunity to extend a huge and heartfelt note of thanks to each and every one of you. In the past 13 years as Managing Director I am proud to say that together we have not only put Promat firmly and clearly on the Asia Pacific map but also achieved enormously good business results, despite some rather awe inspiring challenges, a few of which include the likes of the Asian financial crisis, SARS, avian flu and the more recent international financial crisis. Your support has been crucial.

I wish you all abundant and auspicious good fortune with all future enterprise, both individually and professionally.

Best wishes and warmest personal regards,

Erik D. van Diffelen
Managing Director
Promat Asia Pacific companies

These Are Seasons For Continued Technical Excellence, Green Sustainability And Change

Worldwide, the integrated petrochemical industry is understandably considered a strategic resource asset by most countries and without doubt it is critically important to the global economy.

Apart from its energy resource point status, it is also essential for the production of a wide range of products many take for granted...synthetic fibres and textiles, latex and rubber compounds, plastics and resins, solvents and paints are just a few examples.

Although capacity and growth of the industry is susceptible to boom and bust cycles, the petrochemical industry in Singapore is a good illustration of a well managed and positive risk environment.

The recent arrival of the world's largest steam cracking furnace modules at Exxonmobil's Singapore petrochemical complex illustrates the prevalent mood of cautious optimism for the industry's future.

Each furnace module is about 50 metres in height, weighing in at over 2,000 tons, roughly the equivalent of the combined fully loaded take-off weight of five Boeing 747s...a tall order by any benchmark.

The furnaces were fabricated in Thailand and shipped south for on-site installation in Jurong, where both space and high performance characteristics are always considered premium.

Thin, space saving Microtherm microporous insulation systems are applied at the cross over pipes on all seven Exxonmobil Singapore furnaces. These patented Microtherm HTI solutions offer the thinnest, lightest and lowest thermal conductivity performance.

Microtherm solutions are also remarkably quick and easy to install, despite the smallest possible clearance between pipes and other space and time constraints typical of most petrochem refineries. □

We can be certain of a few facts. Global warming and climate change are realities. Mother Nature will always hold the key to mankind's survivability. Equally certain is the risk of fire.

The confluence of these ideas adds a certain level of credibility to "Green" and "Sustainability". Unfortunately the terminology has become overused and frequently misused.

Interchangeability Of "Green" And "Sustainable" Sows Seeds Of Confusion

We obviously need to redefine and reposition "Green" and "Sustainable" and one of the better definitions comes from the National Association of State Fire Marshalls in the US:

"A Green Building is the practice of creating a sustainable/high-performance structure as one that is a holistic approach to design, construction, and demolition, thus minimising to acceptable levels the building's impact on the environment, the occupants, and the community.

Similarly, a sustainable building or construction industry practice is said "to provide for the needs of the present without detracting from the ability to fulfill the needs of the future."

Just How Green And Sustainable Is A Building That Burns Down?



» Condensed from an original article by **Ian R. Holt**, Regional Technical Director, Promat International Asia Pacific Ltd.



It should be noted that most building design and construction has focused until now on reducing energy consumption bills, making them more "efficient" to operate.

In the US alone, buildings big and small are believed to consume more than 45% of consumed energy and over 75% of all electricity generated through the national hardware grid.

Similar patterns are usually found in other countries, regardless of their level of economic development and sociopolitical maturity. It is a particularly enervating cost-of-living invoice to pay, particularly when other bread-and-butter issues need to be prioritised.

Nevertheless, it is questionable that simply providing a model of good, "Green" and "Sustainable" corporate social responsibility will make every type of building more fire safe. The scourge of fire has been around ever since its good servant bad master character was first discovered and it is likely fire risk will remain part of the built environment for the foreseeable future.

It is clearly better to be well prepared, constructing buildings with systems and materials manufactured to tried, tested and proven to universally recognised standards. A similar system of accurate but common "Green" and "Sustainable" benchmarks needs to now be employed in all parts of the market.

Increased Building Complexity Equals Increased Fire Risk

Another certainty known to every developer, architect, engineer and town planner, is that fire risk expands in direct proportion to the increased complexity of the built environment.

According to some sources, there were apparently 515,000 structural fires in the US in 2008. These cost an estimated US\$12 billion (in excess of €9 billion) in property damage, not to mention many hundreds, perhaps even thousands of human fatalities.

The cost of these fires in terms of water usage and the fuel to make the water available, as well as adding huge amounts of unwanted carbon dioxide to interlinked global ecologies, is virtually incalculable!

Many countries in Asia Pacific post similar trends in annual damage and loss statistics. In others, the problems go unreported.

Designing Fire Safe Buildings That Are Green AND Sustainable

The cornerstone of fire safe design is compartmentation, a system that has been tried, tested and proven according to universally recognised fire curve standards. Many sophisticated, fire designed products, systems and services have developed alongside it.

Fire engineers believe that fire safe buildings can be constructed at acceptable cost but most such structures may not be easy, practical or even pleasant to use. Some allowance for aesthetic values and functionality must be factored into contemporary structural designs.

Furthermore, modern buildings are living, breathing organisms often compared to the human body. They also need routine care and regular maintenance.

Unfortunately, as far as fire safety, and "Green" and "Sustainable" issues are concerned, there is no one size, one solution fits all. Each and every component in each and every fire compartment must be tested and certified to specific fire standards, otherwise the fire safety integrity of the entire structure is jeopardised.

Now, with "Green" and "Sustainable" part of built environment language, unambiguous "Green" and "Sustainable" certification is also deemed essential. This goes above and beyond simple fire resistance level and into the realms of environmental acceptability.

It is essential that the fire safety quotient of each and every building is assessed on an individual merit basis, and appropriate fire protection systems similarly prescribed and installed.

The onus for acceptable "Green" and/or "Sustainable" products, systems and services is on the collaboration of owner, developer, architect, designer, engineer and contractor. An understanding that delivers the demands of current building code regulations and the expectations of the surrounding community is vital.

It should be noted that genuine "Green" and "Sustainable" status enhances the ultimate value of the overall investment, both in terms of investor balance sheet value and the comfort levels of local, surrounding communities.

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Answering The Call Of Safety And Security

In an industry enamored with glass, steel, concrete and modern, perhaps even flammable materials, how “green” and “sustainable” can a modern building be when, for example, conventional cement manufacturing accounts for massive amounts of carbon dioxide emissions?

The carbon footprint of the cement plant and thus of the building in which the cement is eventually used, extends upstream and downstream with limitless impact of the future. The same stringent checklist must be applied diligently to so-called “Green” and “Sustainable” building materials of dubious quality.

While politicians and governments continue to quarrel endlessly about climate change and global warming — and who should be doing what for whom — it is as always best left to private sector initiative to produce the innovations that will make the world a better and safer place for tomorrow’s generation.

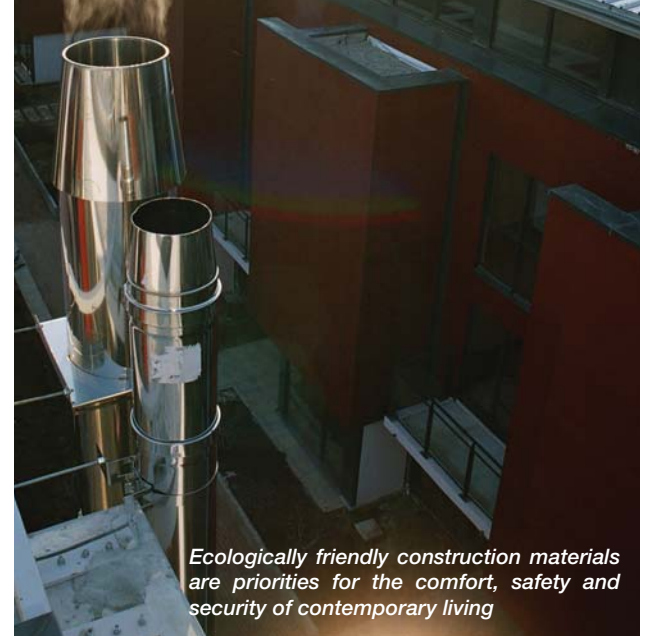
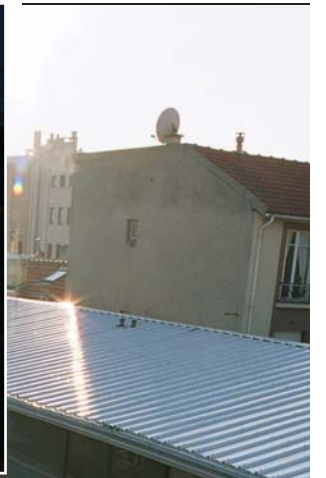


Fortunately, there are many companies creating helpful innovations. The British company Novacem, for example, manufactures cements that actually absorb carbon dioxide during the manufacturing process, rather than emitting it.

Promat is another company with a well-developed R&D programme constantly improving old products and manufacturing new and better fire protection systems that take serious ecological issues into account.

In the final analysis, just how “sustainable” is a building that burns down?

It depends as much on the level of fire resistant products and systems that went into its construction as on the certified “Green” and “Sustainable” products, systems and acceptable industry work practices that went into construction, the efforts to contain possible conflagration and the methods and materials that were used to fight the fire. □



Ecologically friendly construction materials are priorities for the comfort, safety and security of contemporary living

State-Of-The-Art Solar Energy Manufacturing Plant In Historic Malacca Equipped With Promat Fire Technologies

SunPower Corporation of San Jose, California is a leading global manufacturer of high efficiency solar panels and solar systems. It has a reputation as one of the preeminent corporate thinkers amongst worldwide alternative energy industries.

In business since the mid 1980s, SunPower itself is proud to say that the “history of solar energy could not be written without SunPower”, such is the ethos surrounding that the company’s pervasive influence and impact on global solar energy.

SunPower works with leading corporations and its involvement with Shiseido America is a very good example of what usually happens. The US division of the world’s oldest cosmetic company reduced their energy needs by a remarkable 35% with the help of modern SunPower solar technologies.

SunPower has global strategic investments so it fits in well in World Solar Valley in Malacca, the historic Malaysia state that has been humming happily to the tune of modern development in recent years.

SunPower recently opened its third solar cell fabrication plant in Malacca state. The joint venture partner is AU Optronics Corp and the projected will be completed in two phases.

Phase 1 has 14 solar cell production lines with a nameplate capacity of 40 megawatts each. Under Phase 2, the company is expected to have a substantial annual generating capacity when its solar cell production in Fab 3 is in full operation.

The ultramodern facilities in Malacca form the core of SunPower’s technology and manufacturing facilities in Malaysia and also include a dedicated ingot growing and wafering plant.

Substantial reductions in manufacturing costs are expected by 2012 when optimum economies of scale and throughput are likely to be achieved.

This astute and environmentally sensitive company installed 120 minute fire resistant PROMATECT®-H suspended and membrane ceilings along three one kilometre long corridors. □



FATS
Location: Kawasan Perindustrian Rembia, Alor Gajah, Malacca
Product: PROMATECT®-H
Sub contractor: Leecheesin Contracts Sdn Bhd

Promat Protection In Hong Kong’s Prestige Tamar Redevelopment



FATS
Products: PROMATECT®-H, PROMINA® 60
Consultants: Meihardt (C & S) Ltd, J. Roger Preston Ltd
Architect: Rocco Design Ltd
Main contractor: Gammon & Hip Hing Joint Venture



The historic Tamar site is one of the last and thus most expensive waterfront sites remaining on this fabled, many splendid and fragrant harbour!

After the territory reverted to China in July 1997, redevelopment of the former naval base began in 2005. The Topping Off ceremony was officiated by Chief Executive Mr Donald Tsang on 25 January 2011.

The reinvigorated site integrates a visually dynamic “Our Door Is Always Open” design concept that accommodates new government headquarters and the Legislative Council complex. The 37 floor “Door Frame” houses various government bureaux and is sure to provide additional visual impact to the already dramatic skyline of Hong Kong island.

The “Open Door” concept thus acts as a strong reminder for the government to be open-minded, proactive and receptive to public opinion...a point not

lost on the growing political awareness of a hardworking urban population accustomed to the vicissitudes of high density living.

The layout of the Tamar redevelopment is deliberately and purposefully people oriented.

The landscaped, north-south “green carpet” optimises public access to the Tamar site. The disposition of its new buildings forms an effective breezeway from the harbour to inner central business districts, maintaining a good level of natural ventilation in the intense concrete canyons of one of the world’s most “vertical” cities.

Promat fire protection systems — including PROMATECT®-H solid partitions, services enclosures, PROMINA® 60 spandrel walls, along with other fire resistant duct — are employed throughout this prestigious redevelopment. Estimated project completion is mid 2011. □

More people now live in towns and cities. For the first time in human history, rural systems are now more or less geared towards ensuring the survivability of their city cousins.

Accelerating these shifts in the demographic landscape, agricultural production and energy and food distribution patterns have also changed.

The magnetism of urban conurbations becomes irresistible. Similarly, as more people migrate to towns and cities in search of a better future, they also accelerate the change in the fundamental dynamics of the places to which they migrate.

Most cities, especially in the developing world simply cannot cope with the new tide of humanity. New housing and transportation systems, for example, are frequently outdated the moment they are commissioned, unable to cope with overwhelming demand. Government administrations are forever under tremendous pressure to catch up.

On the other hand, thanks to topography, history and other factors, many urban centres have little choice but to grow upwards, literally, reaching for the skies. As land space is reduced and demand increases, costs multiply exponentially. There's little choice but to reach for the stars.

As cities become increasingly "vertical", new dynamics stress the built environment, especially in matters related to safety and security. Hong Kong, for example, is one of the most "vertical" cities in the world, with more high rise structures per km² than anywhere else.

Population pressure cannot be overlooked, too, and some parts of this energetic financial, manufacturing and service centre dominating China's southern Pearl River region are amongst the most densely populated in the world.

Optimising Fire Compartmentation, Smoke Management And Evacuation Plans

Unfortunately, there is no One Size Fits All solution for the overwhelming number of potential fire and security challenges that confront today's built environment. Strategies to successfully cope with the potential threats and the incredible human, economic and physical pressures have to be conceptualised and developed on the drawing boards of regulatory authorities.

Given the simple fact that as buildings and society's expectations of their usage become increasingly complex, the risk of fire increases dramatically, too.

Plans to optimise the security and fire safety of the built environment must therefore utilise the most modern fire protection products and systems, right through to installation and long term utilisation.

The likelihood of fire in an high rise office or apartment, or indeed any high rise structure, poses numerous operational challenges. For example, the ladders, hose lines and snorkels of most fire brigades and emergency response units are severely limited, most unable to reach beyond 20 floors at best.

Fire inhibition systems and evacuation plans must therefore look at functional, best possible ways of evacuating large numbers of inhabitants as quickly as possible.

Effective Fire Risk Management In High Rise Buildings Requires Holistic Strategies

This is often easier said than done, particularly in a densely populated built environment but fortunately more and more governments and city managers are realising their significance and potential for long term good.

Participation In New Building Code Programmes Points Way To Safer Future

Modern fire protection compartmentation and smoke management theories are no less essential.

Fortunately, there is a large body of research and technical evaluation available — tabulated over many decades — for designers, engineers, architects, planners and developers to draw upon for their built environment plans.

Companies like the Promat Asia Pacific organisation have developed fire resistant application systems that answer the call of regulatory authorities. These systems meet and frequently surpass all known fire curves and worldwide standards for fire performance.

Indeed, Promat's proactive fire resistant systems are frequently recognised and used as benchmarks for performance values by many regulatory authorities. The company's participation and partnership in Singapore's Building and Construction Authority's Green Label programme, for example, show the way to much more responsible and inclusive participation in safety for the built environment in the future. □



Caico SPRAYFILM® WB3 applied with brush and roller for touch up after sprayed onto the steel structure



© Artist's impression courtesy of SkyscraperCity

A New Digital Age Sports Stadium Reaches For Iconic Stardom

Type "Perth Arena Stadium" into almost any Internet search engine, and the results are likely to match the digital medium! The trendy jpeg visuals from cyberspace — a kind of cross between digital art and futuristic Leggo building block shapes — promise a stadium well in tune with modern needs and demands.

On one hand it looks like geometric pop art eye candy designed for performance aficionados but on the other hand, it is clearly and cleverly designed to attract capacity crowds who will in turn quickly optimise the structure's plot ration and return on investment.

Theoretically at least, the new Perth Arena is the answer to every event manager's wildest prayers for consistent audiences and thus consistent profits.

The initial reaction to the striking and impactful exterior design motif is quickly matched by the striking visual impact of the interior.

The Perth Arena Stadium obviously intends to keep audiences coming back for more, whatever the wide range of events is intended to be, from sports to entertainment and even media featured conventions. All will feel comfortably at home at the new Perth Arena Stadium.

Indeed, the Arena is said to be a benchmark for a world-class stadium with its graphically attractive yet functional design quickly adaptable to future needs.

This state of art indoor sporting and entertainment arena, provides ultra comfortable seating for some 14,500 spectators.

It is expected to be completed early next year and hosting actual events by mid 2012. It will be one more diamond in the crown of Perth's world class facilities, capable of attracting national and international sporting and entertainment events to the West Australian state capital.

The Perth Arena Stadium facilities also include:

- a retractable roof
- state of the art acoustic design
- 680 bay car park
- five function rooms
- a café and bar on the ground floor operating during event and non event times

The structure's façade design is articulated in a series of giant puzzle-like forms. These serve to break down the enormous scale of the Arena into smaller, more readable and cohesively visual components.

CAFCO® 300 vermiculite gypsum based wet mix spray and over 35,000 litres of Caico SPRAYFILM® WB3 water based intumescent coating are applied extensively to key structural steel members throughout the arena, providing up to 120 minutes of fire resistance. PROMATECT® 100, PROMATECT®-H and PROMATECT®-L boards were also used in deflection heads throughout the structure. □

Project owner Government of Western Australia	Engineers Aurecon Australia Pty Ltd, WSP Lincolne Scott Ltd
Main products CAFCO® 300, Caico SPRAYFILM® WB3	Main contractor BGC (Australia) Pty Ltd
Architect Cameron Chisholm & Nichol	

DISCLAIMER

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