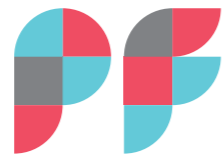


♥ Happy?



# PHASE FREE for the WORLD

Overcoming climate change with Phase Free.



# For our world. For our future.



Are you happy? Do you sleep well, wake up feeling refreshed, eat delicious foods, and live healthy every day? For those of us who live on this planet, such days of peace and carefree living are perhaps the happiest.

However, we are now faced with a serious threat to our way of life. This threat comes in the dreaded form of climate change brought about by global warming. Climate change is generating a variety of crises, including floods, heat waves, droughts, storm surges, and is depriving many species of their lives and livelihoods and wreaking havoc around the world.

The wisdom that will allow us to continue to live prosperously and joyfully amid the severe environmental changes that are occurring due to climate change... This is what we mean by living in accordance with the Phase Free concept. In this regard, we hope to explore with all of you the Phase Free concept, which works to protect our lives and livelihoods and gives us a reason to be truly hopeful for the future. We would like to join forces with you to help build a society in which everyone can live with serenity and joy.

Let us all think about our future in terms of coexisting with the Earth.

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# We've taken steps to move forward by adapting to our environment.



## 01

Humankind's ability to adapt to the environment

Civilization, culture, and technology all emerged from our ability to adapt.

### The evolution of humankind. A chronicle of adaptations to changes in the global environment.

It has been approximately 4.6 billion years since the birth of our planet and approximately 2 million years since the emergence of our species. Humanity has made dramatic strides despite our short period on a planetary timescale. It is no exaggeration to suggest that our existence has now become the biggest influence on the global environment. Human prosperity can be attributed to many factors, one of which is our ability to flexibly adapt to global environment changes.

For example, in prehistoric times, humans had to learn how to use tools and fire. An agricultural revolution subsequently occurred that led to stable food production and usher in settled living. Moreover, as agriculture established and populations grew, urbanization made headway and numerous civilizations arose thanks to advancements in irrigation and building technologies. Cities during medieval times underwent economic and cultural development. In modern times, The Industrial Revolution saw radical improvements in production technologies through mechanization. In these ways, humanity has developed by generating knowledge and technologies that enable us to adapt to our fast-paced environment.

### In different regions of the world, people live while adapting flexibly to their climate and environment.

Through knowledge and ingenuity, people have been adapting to their climate and environment in areas of clothing, food, and housing. Around the world, there are many examples of superb adaptation to the local environment. As for housing, stilt houses designed to counter humidity and lower indoor room temperatures are found in tropical rainforest regions. We find yurts across the Mongolian steppes, which are portable, easy to set up, and maintain a cozy interior. Regarding clothing, people wear kanduras in the Persian Gulf region to protect the body from the sun during the day. In terms of food, we eat smoked salmon, a preserved food suitable for colder climates.

Such adaptation has allowed humankind to continue progressing and lead prosperous lives. Our ability to adapt to our environment can be described as one of our most important capabilities and assets.

Our ability to adapt to the environment is one of humanity's greatest sources of pride.



**Yurts: housing in Mongolia**

Yurts are round portable tents that are used by nomadic tribes in Mongolia. Adapted to the climate and weather conditions in Mongolia, yurts provide a cool environment in summer and a warm one in winter. They are also easy to assemble and transport, making them suitable for the nomadic lifestyle.



**Stilt houses: housing in Vietnam**

These Vietnamese houses are traditional dwellings found in mountainous regions and areas prone to floods. By raising the living space above ground level, floodwaters are prevented from entering the home. Vents and draft holes designed in the lower area of the house also reduce the humidity inside.



**Kandura: clothing in the UAE**

A kandura is a typical traditional article of clothing for men worn in the UAE and other countries in the Persian Gulf region. A kandura is a white robe made from a single piece of breathable cotton or linen. It is highly breathable, and its white color reflects sunlight and minimizes the amount of heat absorbed.



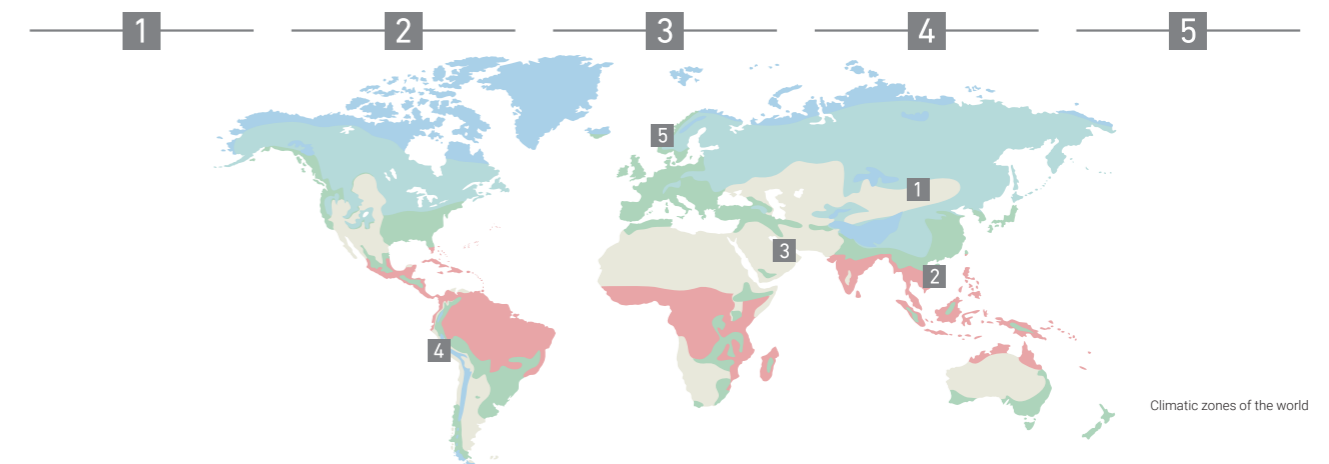
**Poncho: clothing item worn in Peru**

The Poncho is a typical, traditional item of clothing worn in Peru and other regions of Latin America. This rectangular or square-shaped piece of fabric is slipped over the neck to cover the body. It effectively retains heat, protects from the cold, and is suitable for various activities without restricting body movement.



**Smoked salmon: food in Norway**

Smoked salmon originated in Northern Europe and is made by smoking salmon. Smoking the fish helps maintain its freshness and makes it possible to store it for an extended period of time. The smoke also imparts a rich aroma and taste.



Climatic zones of the world

# People cause severe changes, and people suffer.



## 02

People cause severe climate change.

### The Industrial Revolution caused unprecedented climate change, resulting in numerous damages.

Humanity has continued to make rapid progress by refining their ability to adapt to the environment. Yet, that progress has now reached a major dilemma. The Industrial Revolution in Europe from the late 18th to 19th century gave rise to mechanization and dramatic improvements in productivity. People's lives became unbelievably enriched in areas of clothing, food, and housing through market expansion, a booming economy, developments in transportation networks and medical technology, and other factors.

However, using fossil fuels, including coal and oil, as their source of power led to the emission of huge amounts of carbon dioxide into the atmosphere. The resulting greenhouse gases, a major component of which is carbon dioxide, trap heat in the atmosphere and accelerate global warming. This warming process led to changes in precipitation, the occurrence of extreme weather phenomena, and rising sea levels. Recently, various crises such as floods, heat waves, droughts, and storm surges have been inflicting massive damage on humans. The unprecedented climate change due to the rapid warming caused by humanity is now a critical issue for the entire planet.

Climate change caused by warming is now a major issue.



**Flooding**

In the 1970s, there were fewer than forty damaging floods per year for which international assistance was requested or that affected more than 100 people. This number has more than tripled to exceed 120 cases a year since 2000. (\*1) In addition, flood damage could increase by several-fold if temperatures rise by 4 degrees C. (\*2)



**Heat waves**

Between 20,000 and 30,000 people were estimated to have died from heat waves in Europe in 2003. (\*3) Some estimates suggest that if there are no changes to current policies aimed at mitigating global warming, surface temperatures will rise 2.7 degrees C above pre-industrial levels by 2100, exposing more than 2 billion people to life-threateningly hot environments. (\*4)



**Droughts**

From 1970 to 2019, it is estimated that drought-related disasters around the world have caused billions of dollars in economic losses. (\*2) Some estimates suggest that if we fail to adopt climate measures while keeping fossil fuel-dependent development, a period of record-high drought frequency that lasts for 5 or more years will occur within the century in approximately 30% of the world. (\*5)



**Storm surges**

Sea levels rose by a global average of about 0.2 meters between 1901 and 2018. (\*6) By 2100, several low-lying island countries will be submerged and approximately one billion people will likely face storm surges and other climate risks specific to coastal regions in the medium term. (\*2)

### An unprecedented risk to humanity. Measures to deal with climate change are now an important challenge and responsibility for every one of us.

What will happen to the Earth and humanity if global warming continues at its current pace? A failure to reduce carbon dioxide emissions will cause the concentration of greenhouse gases to rise and the average global temperature to be between 4.0 and 5.5 degrees C higher in 2100 than it is today. It is predicted that this will result in an expansion and increased frequency of flooding caused by torrential rains, droughts, heat waves, storm surges, and other extreme weather-related disasters that can affect the entire planet. Various disasters will occur worldwide, inflicting massive damage to our lives.

To continue living prosperously and serenely on Earth, we must take on this challenge and responsibility of implementing measures against climate change without delay.

If we continue on this current path, the Earth and humanity will be at risk.

#### Worst-case scenarios due to global warming as predicted by climate system models

If greenhouse gases continue to be emitted at high levels, it is predicted that average temperatures will rise by at least 4 degrees C over pre-Industrial Revolution levels by 2100. (\*6) In which case:



About half of all marine life in the tropics will become extinct

If warming of more than 4 degrees C occurs, it is possible that about half of all tropical marine species will become extinct and that the principal forms of vegetation in ecosystems across 35 percent of the land surface around the globe will change. (\*2)



Approximately four billion people around the world will suffer water shortages

Warming of 4 degrees C could cause around 4 billion people around the world to suffer from water shortages. (\*2)



At least a quarter of the world's population would be at risk of dengue fever

If warming of more than 4 degrees C occurs, it is predicted that the vector range of dengue fever will grow across North America, Asia, Europe, and sub-Saharan Africa to put an additional 2.25 billion people at risk of contracting this disease. (\*2)



**Mitigate climate change.  
Adapt to climate change.  
That is how we safeguard  
our future.**

# 03

Two ways to cope with climate change

**We must also think about how we can prevent the damage caused by climate change.**

**Mitigate and adapt. To address the crucial challenge of climate change, both measures are indispensable.**

## Relying solely on mitigation measures to eliminate the causes of climate change will not be enough.

Global warming attributed to industrial development has also led to various damages around the world. For example, rapid damage includes flooding and high waves, and then there's gradual damage such as rising sea levels and desertification. In order to prevent this, many initiatives are being undertaken worldwide, including the use of renewable energy and reforestation. These climate change mitigation measures are designed to minimize the causes of climate change and prevent further warming from occurring.

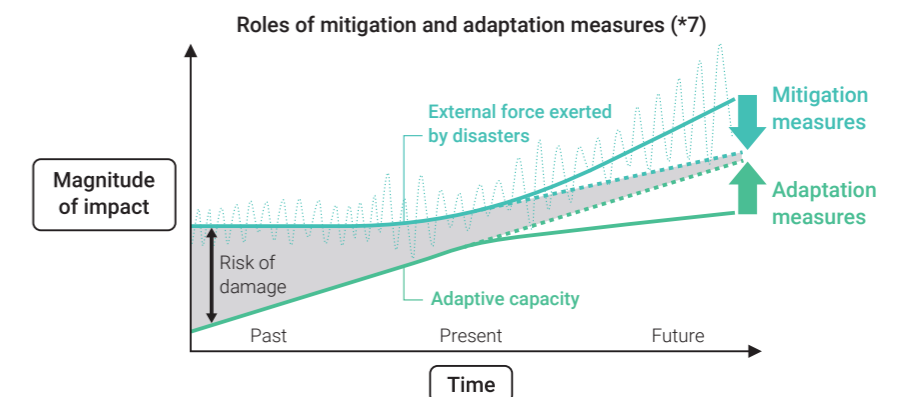
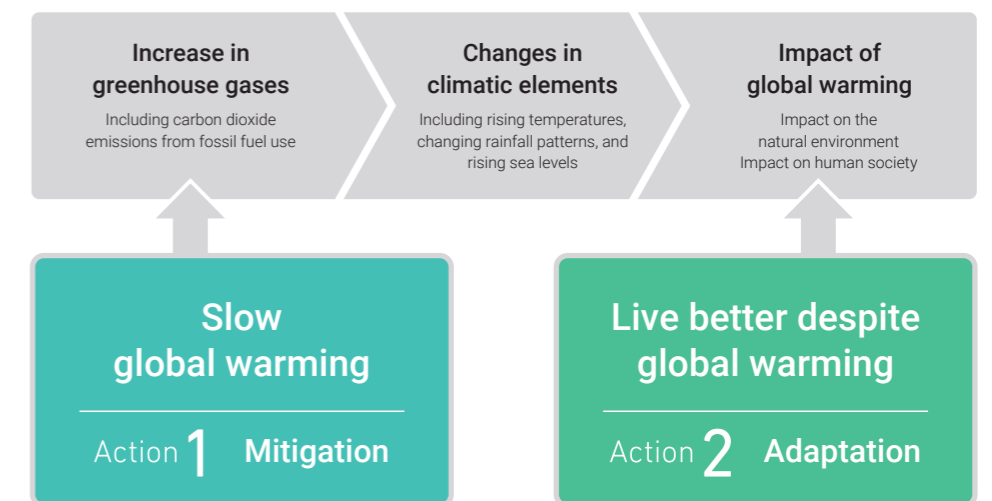
It goes without saying that these are crucial initiatives. For those of us who wish to live on Earth as it continues to get hotter, however, mitigation measures alone will not suffice. It is also important to prevent, or eliminate, climate changes as well as disasters and damages that are occurring now or may occur in the future.

## We also need to implement adaptation measures to prepare for the impact of climate change.

It is vitally important for our future that we work to mitigate climate change in order to prevent further warming from occurring. Yet, that alone will not be enough. This is because, since climate change is already underway, we cannot prevent climate change from causing damage and major disasters through efforts aimed solely at mitigation.

It is also important to figure out how we can face and prepare for any climate change-related damage that will continue to unfold. In other words, it is also exceedingly important to figure out how we can flexibly adapt to a global environment that is altering due to climate change.

Mitigate climate change. Adapt to climate change. Both approaches are indispensable for climate change measures that constitute an important challenge for us.



How do we naturally adapt to climate change in our daily lives?  
 'Phase Free' will bring about a new tomorrow.

# 04

Phase Free as a measure for adapting to climate change

## Participation by everyone in a natural way is the quickest way we can adapt to climate change.

Thus far, to combat climate change, we have been focusing on mitigation measures which involve initiatives to stem the progression of warming. Typical examples of this approach consist of the use of renewable energy sources, reforestation, and the promotion of energy-saving household appliances and fuel-efficient automobiles that emit low amounts of exhaust. These many different initiatives are being adopted not just by governments, but also by companies and the general public worldwide.

At the same time, examples of adaptation measures to prevent damage include embankments to protect against flooding, greening to address the heat-island effect, the development of crop varieties that can still grow at high temperatures, and dams to prepare for water shortages. Most of these are being implemented as crisis-management measures by governments or public bodies, or as social-contribution projects by some private-sector companies. While these initiatives have helped prevent considerable damage, measures to address the wide range of climate change impacts are still inadequate. Many lives and livelihoods will continue to be lost. The substantial damage caused by climate change is spreading beyond national and regional borders. We need to work on solving this problem at both individual and societal levels.

But this is not a simple matter because it is quite difficult to convince not just countries and companies, but also individuals, to proactively spend money, time, and efforts to prepare for damages that has not yet occurred. The smart way to overcome this hurdle is to find ways in which we could naturally participate in measures that adapt to climate change in our daily lives. Naturally help prevent damage by simply living each day with joy and vitality - this is likely the quickest way to adapt to climate change.

The problems we are all responsible for can only be solved if we all do our part.



## Reasonable, efficient, and smart ways of adapting to climate change in our daily lives. That is the Phase Free concept.

Generally speaking, we tend to prioritize our daily lives and put off preparing for an uncertain future. In addition, any effort we make to prepare will be limited to what is minimally needed (unless we can afford to do more) and will thus be insufficient. This is why we find it so hard to make progress when it comes to preparing. In this context, there is a highly effective and important concept that allows all of us to naturally participate in adaptation measures. This is the 'Phase Free' concept.

The Phase Free concept is all about designing products and services to enrich our daily lives and protect our livelihoods and lives in irregular situations. In other words, it consists of smart ways that prevent future damages from occurring, while utilizing the values found in our everyday lives instead of having to incur additional costs. With the Phase Free concept, the products and services you normally use in your daily lives can help prevent all sorts of damage and this approach makes it possible to naturally adapt to climate change.

To be useful at any time is what helps us to adapt.

# 05

Phase Free takes the barriers away between our daily lives and irregular situations

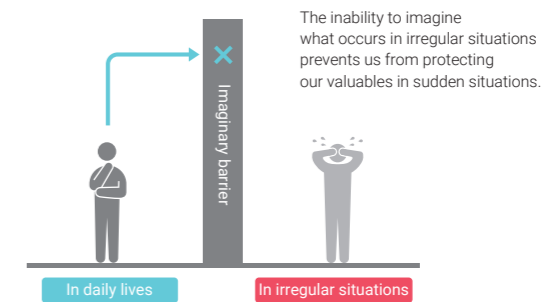
**Be free from barriers between our daily lives and irregular situations. 'Phase Free' will now become the new way of living.**

## In our daily lives, it is difficult to imagine experiencing irregular situations, such as a disaster.

People understand that they may suffer damage in a disaster, but cannot keep dwelling on such scenarios. It is difficult to imagine irregular situations with the future being uncertain, yet when a disaster or accident actually happens, our awareness of the importance of preventing disasters rises temporarily. But as time passes, preparation for irregular situations can become second place in our daily lives and never results in concrete actions.

In addition, no matter how detailed of an irregular situation you picture, or how strongly you want to protect and prevent the loss of your family's lives and livelihoods, it is difficult to translate these emotions into actions for preparation. This is because we tend to prioritize goods and services necessary in our everyday lives. We then put off items that would only be helpful in irregular situations, since doing so would be physically and financially difficult to justify. Consequently, many are unable to prepare sufficiently for irregular situations and other disasters.

Awareness for disaster-prevention fades over time. A solution that does not depend on awareness is needed.



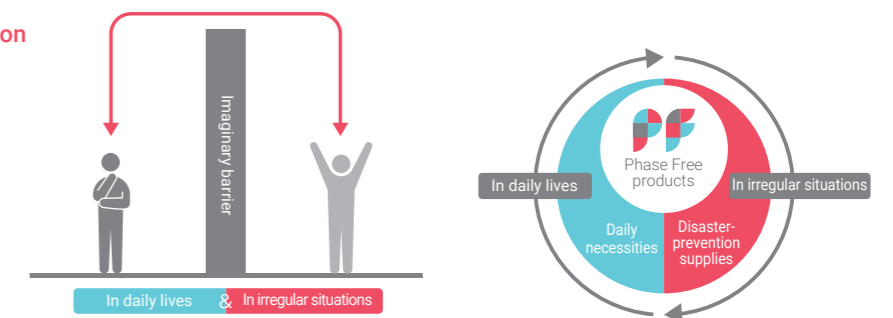
## A concept for protecting future lives and livelihoods by eliminating the barrier between the two phases - daily lives and irregular situations. This is the Phase Free concept.

Whether it be a disaster occurring, or an irregular situation arising in a world in which climate change has progressed, it is certainly difficult to have a detailed picture of the future as we go about our everyday lives. Then, it would be better to stop making a distinction between the two phases - daily lives and irregular situations, but rather, ensure comfort in such irregular situations with items that we use on a daily basis. The Phase Free concept is all about the thinking and initiatives that emerged from this idea. Goods and services that are used in our everyday lives are being liberated from the dichotomy between daily lives and irregular situations, and will protect our lives and livelihoods before we realize that this is happening. The Phase Free concept makes it possible to respond in irregular situations that we cannot imagine in our everyday lives, and also addresses an uncertain future in which climate change is well underway.

Until now, we have been trying to imagine irregular situations and working primarily to prepare for them in advance. However, it is in fact difficult to prepare for all the predicted damage. Although preparations are exceedingly important, this alone cannot be enough. Even for situations which are difficult to prepare for in advance, we can continue to lead safe and secure lives by making sure our everyday items and services are also helpful in irregular situations. Hence, the Phase Free concept is a new way of living that can protect our lives and livelihoods from an unpredictable future.

If something in our daily lives is Phase Free, meaning it is also useful in irregular situations, then it can handle the gradual progression of future climate change.

Even if you cannot imagine what occurs in irregular situations, you can be protected in a Phase Free manner. Disaster-prevention supplies are normally kept in storage and used only in emergencies. Since a Phase Free product is something that is used with affection in our daily lives but is also helpful in irregular situations, it can then be used easily and effectively at all times.





**Let's make our 'always' better,  
and our 'what ifs' good as well.  
This is how we can adapt to  
whatever changes may come.**

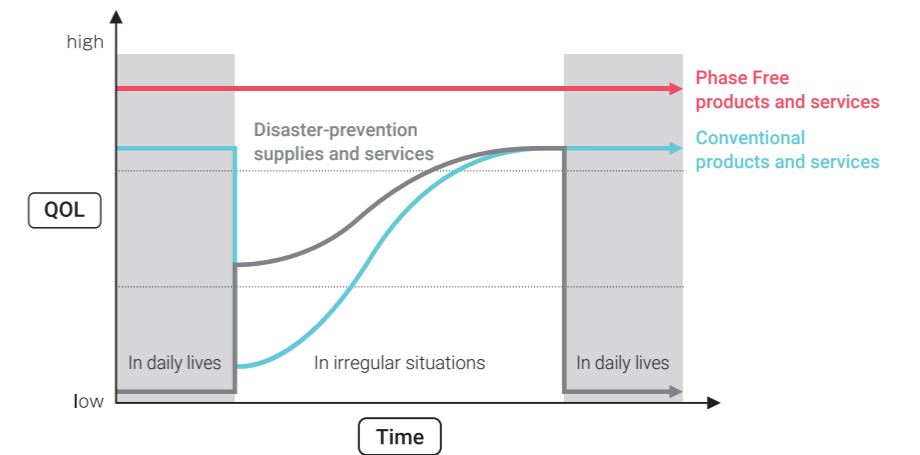
# 06

Our lives and society protected by Phase Free

The Phase Free concept is all about the value in both daily lives and irregular situations.

## The Phase Free approach enhances our overall quality of life.

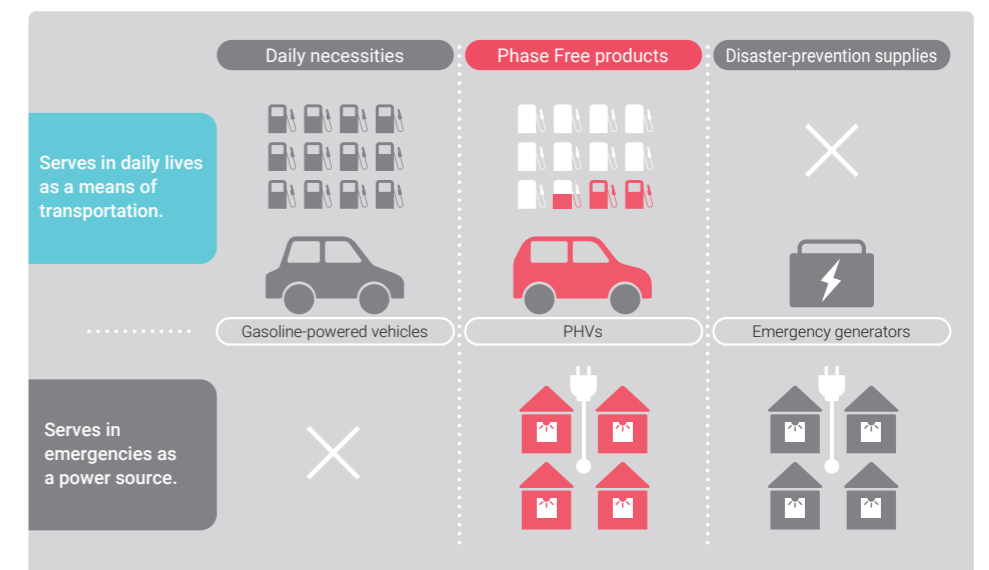
The daily necessities that we routinely use demonstrate their value primarily in our everyday lives. However, their value drops like a rock when a disaster strikes, or an irregular situation suddenly occurs. In contrast, disaster-prevention supplies demonstrate value in emergencies but are useless in everyday life and can be financially burdensome with not enough space to store them. Unlike these daily necessities and disaster-prevention supplies, Phase Free goods and services that are useful in our everyday lives are able to support our livelihoods and lives in irregular situations without having to be modified. This makes it possible to continue raising our overall quality of life without having to lower the quality of life in irregular situations.



**Convenient for our 'always'. Useful for our 'what ifs'.  
These goods and services protect livelihood and society,  
despite harsh environments caused by climate change.**

A feature of Phase Free goods and services is their ability to be used across a wide range of situations, in both daily lives and irregular situations. For example, a plug-in hybrid vehicle (PHV) enhances quality of life over a conventional gasoline-powered vehicle in the context of daily lives by offering such value as economical fuel efficiency and a reduced environmental impact through energy-saving gains. In an emergency, its motor and batteries can be used to generate and store electricity to support life in an emergency and as a source of electricity in a power outage. In this way, harnessing Phase Free products and services that provide value in both daily lives and emergencies allows us to live comfortably and flexibly adapt to the harsh environmental changes brought about by climate change.

Phase Free products have already begun to play an active part in our everyday lives.



PHVs can draw their motive power from two sources: an internal combustion engine and an electric motor. It can use gasoline to generate electricity and also recharge from an external source.



**A happy world in which everyone plays a part.**  
**A future of endless possibilities awaits.**



**07**

Phase Free will bring a future of endless possibilities

The Phase Free concept is spreading across numerous areas, including goods, facilities, information, and services.

Everyone on earth can support this concept, whenever and wherever they may be. The Phase Free concept solves problems associated with measures for adapting to climate change.

The Phase Free concept enables us to adapt to climate change while utilizing our daily life values, instead of incurring costs for emergencies. The fact that anyone, at any time, from any location in the world, can adopt this concept means that no one will be constrained in terms of people, goods, money, or time that had previously been only available for limited measures in irregular situations. With the Phase Free concept, we can harness the limitless value found in our everyday lives to solve issues related to disaster prevention and climate change adaptation measures that could previously only be addressed with limited people, limited time, limited goods, limited money, and limited information. The Phase Free concept that adds value in both daily lives and irregular situations expands across a broad range of areas, from tableware, stationary, fashion, and other products that we regularly use for vehicles, facilities, services, and infrastructure. This allows the concept to be more widely accepted by society, expand its market, and encourage private-sector companies and public bodies to participate. This way, the Phase Free concept promotes a diverse range of initiatives to be undertaken in every location around the world.



**It is not just about climate change. The Phase Free concept will enrich life overall.**

The Phase Free concept is not only a response to climate change. Adaptable to all disasters, including earthquakes and pandemics, the Phase Free concept is a flexible platform for enriching our lives by transcending the boundaries of daily lives and irregular situations. Throw your ideas and inspirations to the mix, and help create an infinite number of new products and services to protect people and society.

The Phase Free concept links new values together and expands our world into a rich future with limitless markets. This is possibly the most evolved form of environmental adaptability that we as humans have at our disposal.

Share your ideas with the world through the Phase Free concept.



# Collection of Case Studies of Phase Free Designs

Everyone's thoughts and ideas can help shape a wonderful society.



## Fifteen case studies of Phase Free applications

In this section, we introduce fifteen case studies in Japan in which the Phase Free concept was applied across three areas: products, services, and facilities. Use these to spark ideas and manufacturing tips for the creation of a Phase Free society.

In addition, in order to steadily spread and deepen understanding of the Phase Free concept, we evaluate and quantify the extent to which products and services are incorporating the Phase Free concept from various viewpoints. By referencing such evaluations, manufacturers and service providers can make use of these case studies for development purposes and users too can more easily take advantage of the value provided by the Phase Free concept.

Visit our website for more information about these evaluations.  
<https://dcs.phasefree.net/phase-free-design/>



## PRODUCTS



Meiji Hohoemi RakuRaku Milk P19



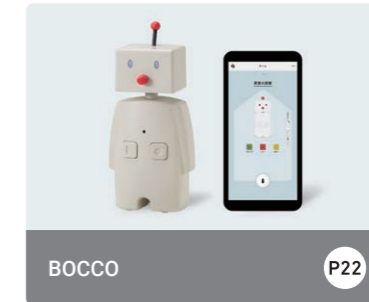
POWER TANK P20



MULTIS & GRABIS P20



ASICS RUNWALK P21



BOCCO P22



OC Portable Battery P22

## SERVICES



Rescue Hotel / HOTEL R9 The Yard P23



PHASE FREE CONCEPT & GUIDEBOOK for School P24



IKEBUS P24

## FACILITIES



Roadside Station: Kurukuru Naruto P25



Toshima Midori Disaster-Prevention Park: IKE-SUNPARK P26



The Complex of Town Hall and Disaster Management Base: Watashino P26



Imabari City Waste Management Center: BARI CLEAN P27



Bo-ku-Lab Lease NIIMO P28



UZUHALL P28

## Meiji Hohoemi RakuRaku Milk

Meiji Co., Ltd.  
<https://www.meiji.co.jp/baby/hohoemi/rakurakumilk/>



Since this is a liquid formula that does not need to be modified, it can be easily served to infants. Supports childcare for the whole family.

In daily lives



Meiji Hohoemi RakuRaku Milk is a liquid formula. An infant can be fed simply by transferring this product to a baby bottle at room temperature. There are two sizes that can be selected, based on the amount of milk consumed by the infant or the infant's age in months. With this product, anyone can easily feed a hungry infant with no wait-time, which makes it easier for dads to help care for the child and grandmothers to be trusted to babysit.



Whether you are outdoors, living in an evacuation center, or have no access to electricity, gas, or water, you can safely feed your infant using a dedicated attachment.

In irregular situations



Meiji Hohoemi RakuRaku Milk allows anyone to easily feed an infant just by fitting a dedicated attachment and nipple to the can. This can be done when you're outdoors or while living in an evacuation center, when electricity, gas, or water cannot be accessed. These sturdy cans protect their contents and are also safe and sanitary. This product can be kept in storage for an extended period of 18 months (12 months for the 120 ml cans) from the date of manufacture and has been carefully formulated in terms of nutritional requirements for the development of babies. Perfectly safe to use on an everyday basis as well as in irregular situations.

Dedicated attachments




**Meiji Hohoemi RakuRaku Milk**  
 Milk is poured into highly durable cans and undergoes high-temperature pasteurization. Can be kept in storage at room temperature for 18 months (12 months for the 120 ml cans) from the date of manufacture.  
 Left: 200 ml, right: 120 ml

\* Dedicated attachments are not sold as standalone products.  
 \* Use Pigeon brand [Bonyu Jikkan] nipples and caps.  
 \* Pigeon brand [Bonyu Jikkan] products are sold separately.

## POWER TANK

Mitsubishi Pencil Company, Limited  
[https://www.mpuni.co.jp/products/ballpoint\\_pens/ballpoint/power-tank/stander.html](https://www.mpuni.co.jp/products/ballpoint_pens/ballpoint/power-tank/stander.html)



The use of a pressurized refill mechanism allows you to write with the pen pointed upwards on calendars and wall-mounted memo pads. Also useful for shorthand.



Compressed air at 3,000 hPa pushes out the ink to ensure smooth writing each and every time. You can also write with this pen pointed upwards or horizontally on calendars and message boards mounted on walls during meetings. It can also be used for shorthand since you can write smoothly without the ink smudging. You can also write on pieces of paper that tend to get wet in a restaurant or similar environments.



In an emergency, even in a rainy, outdoor setting, you can write on wet paper. You can also write on notice and message boards to communicate with others during a disaster.



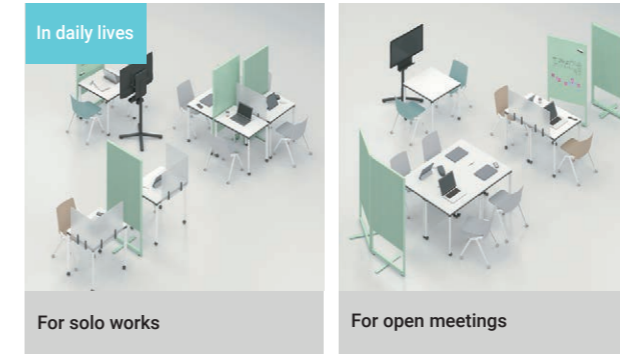
This pen is designed to prevent water from seeping through the tip and mixing with the ink, so you can write on wet paper even in a rainy, outdoor setting during an emergency. Since you can also write with the pen pointed upwards, this pen can be used to write on notice and message boards during a disaster. The value of this pen can also be demonstrated in harsh environments, including sub-zero environments in which it would be difficult to write with conventional ink.

## MULTIS & GRABIS

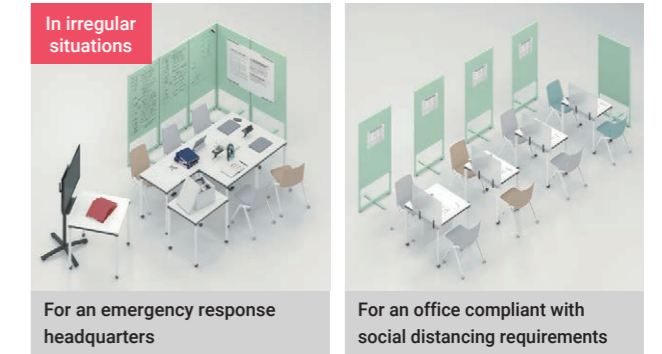
KOKUYO Co.,Ltd.  
<https://www.kokuyo-furniture.co.jp/phasefree/>



Since these items are easy to move around, they can be freely arranged for whatever layout suits your work style. These items are widely used for both solo work and meetings attended by multiple people.



These can be used to flexibly respond in irregular situations, such as when setting up an emergency response headquarters during a disaster or designing an office layout that takes social distancing into account.




"Multis" are compact tables equipped with casters while "Grabis" are lightweight panels with white boards. This is why they can be moved with ease. The layout of the room can be freely changed to suit all work styles - from standalone use for solo jobs, to meetings where multiple tables are combined as well as for large group projects. Magnets built into the legs make it easy to connect the tables by simply arranging them closer together.



Since both the tables and panels can be freely arranged in whatever suitable layout, when disaster strikes, such as an earthquake, you can easily set up an emergency response headquarters by connecting several tables together and surrounding them with panels. In the event of an emergency such as a pandemic involving a new virus, an office layout with social distancing can be easily arranged.

## ASICS RUNWALK

ASICS Corporation  
<https://walking-journal.asics.com/>



They perform well at work as business shoes that provide a comfortable fit for running. Comfortable on rainy days as well as in humid conditions.



While maintaining a trendy fashion style with the use of high-quality cowhide, the unique sole-technology borrowed from running shoes provides superior cushioning, resilience, and shock absorption for comfort and ease of walking. These shoes can be used at work as business shoes that can be worn while running. The use of Gore-Tex fabric, which offers superior waterproofing and breathability, also enhances comfort on rainy days and in humid conditions.



These shoes lavishly incorporate materials such as "GEL", a material that absorbs the impact when the foot strikes the ground, "SpEVA" for superior resilience, "Ortholite" insoles for excellent cushioning properties, and "Gore-Tex" for exceptional waterproofing and breathability. These are running business shoes with a beautiful silhouette.

Reduces the impact on your feet when evacuating or walking home and lessens the strain when walking long distances. Supports stable walking even on uneven roads.




If you are forced to escape, evacuate in the event of a disaster, or walk long distances home when public transport options are disrupted, the exceptional cushioning and resilience of these shoes absorbs the shock and reduces the impact imposed on your feet. In addition, resin shanks reduce twisting to support stable walking even on uneven paths covered in scattered debris.



## BOCCO

Yukai Engineering Inc.  
<https://www.bocco.me/>



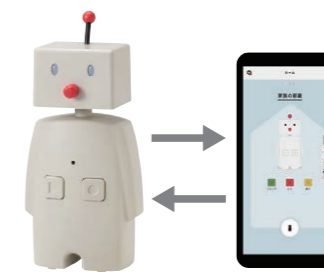
Supports communications between family members who are not in the same location through the use of voice and text.



In an emergency, connect to the Internet to speak with a distant family member for emotional reassurance.




BOCCO is a communications robot that is used by linking it with a smartphone app. The voice file for a message recorded with BOCCO by a child at home will be sent to the smartphone of a parent, who is out. If a text message is sent to a child by a parent who is working, BOCCO will read it aloud as an example of the way that it enables two-way communications. This robot can also be used to keep an eye on the elderly who are unable to use a smartphone. If the attached vibration sensor is placed on a door, it can also detect when a child returns home and send a notification to the app.



In an emergency situation, a message can be sent to a distant family member just by talking to BOCCO. If you are physically ill, or if you are unable to move and use a smartphone due to an emergency, you can call for help or inform others of your situation. Since BOCCO uses Internet connection, you can confirm the safety of your family members for peace of mind even during an emergency that has compromised telephone services.

## OC Portable Battery

OKAMURA CORPORATION  
<https://www.okamura.co.jp/product/others/oc/>



This easily portable battery helps make working freer and more comfortable.



Can be used as an emergency power source in the event of an unexpected disaster or power outage.



OC is an easily portable battery weighing 1.9 kilograms. You can work wherever you want with ease without having to look for a power source. A simple design that suits any setting allows you to set up your workspace even in cafeterias, cafés, and other locations that lack an electrical outlet. Since the battery has enough capacity to recharge a laptop computer battery up to 3.5 times, and a smartphone battery up to 14 times, a single battery provides enough electricity to power a full day's work.




This battery can be used as an emergency power source when an emergency occurs, or during a power outage caused by an unexpected disaster. Equipment you normally use in the office can remain fully operational even in irregular situations. A single battery can conveniently supply electricity to four devices, such as smartphones and personal computers, all at the same time. Since it is easily portable, it can also be comfortably used outdoors and at evacuation centers.

\* Applicable for battery capacities of 50Wh for a laptop, and 12Wh for a smartphone. To supply electricity to a laptop, a cable and device compatible with Type-C™ PD specifications are needed.

## Rescue Hotel / HOTEL R9 The Yard

DEVELOP Co., Ltd.  
<https://hotel-theyard.jp/>



This is a hotel made with containers that can be easily relocated, which means that you can set up a business hotel in any empty lot.



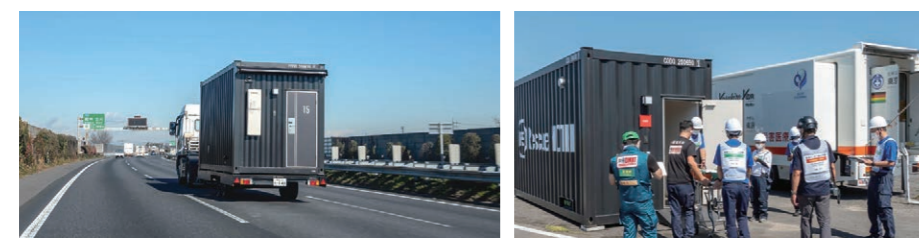
Rescue Hotel/HOTEL R9 The Yard is a container hotel made with architecturally repurposed container modules, each one of which houses a guest room. You can take advantage of the ease with which containers can be transported to move them to any empty lot. A business hotel can be easily assembled. The container comes equipped with a prefabricated bathroom, bed, refrigerator-freezer, microwave oven, and air purifier to ensure that a comfortable hotel stay can be enjoyed.



Containers can be fully relocated to disaster-affected areas and used as evacuation centers, accommodation facilities, medical examination rooms, or meeting rooms for planning disaster measures.




When a disaster strikes a container can be placed on a trailer and moved to the affected area. A container can be used as an evacuation center or accommodation facility for people in need of help during a disaster. Given that these are containers, the privacy of users is also ensured. A container can also be used as a place where volunteers and health-care workers can take a break, as a general medical examination room, or a room where meetings on disaster measures can take place depending on the situation.



## PHASE FREE CONCEPT & GUIDEBOOK for School

Naruto City Board of Education  
[https://anzenkyouiku.mext.go.jp/news/2021-10/data/phasefree\\_for\\_school.pdf](https://anzenkyouiku.mext.go.jp/news/2021-10/data/phasefree_for_school.pdf)



By incorporating disaster viewpoints into regular classroom lessons, students will be more interested in and feel a greater need to engage with their lessons.



For example, by including the speed of a tsunami in a math lesson on velocity, students will compare it to their own fifty-meter running speed and conclude that they would be overtaken even if they were to run as fast as they could. By getting students to viscerally understand the notion of speed in this way, students will be more interested in and feel a greater need to engage in the lessons.


The knowledge and experience concerning disasters that are naturally obtained in the course of attending school will be useful in irregular situations.



Incorporating the Phase Free concept into a math lesson on velocity will make it possible for students to immediately determine that they should flee as quickly as possible since tsunamis would quickly catch up to them otherwise. The knowledge and experience gained in school should be useful in irregular situations. For example, people should endeavor to evacuate as quickly as possible if a tsunami were to occur.

## IKEBUS

Toshima City/ WILLER, Inc  
<https://www.city.toshima.lg.jp/333/machizukuri/kotsu/bus/1910312223.html>



Environmentally- and people-friendly small EV buses

Can be used as a mobile power source vehicle in times of disaster.



IKEBUS is the name of a small bus powered by an electric motor, and is capable of accommodating 22 passengers. This unique ten-wheel-drive vehicle is environmentally friendly since it does not generate any emissions. Since its maximum speed is 19 kilometers per hour, it is slower than a conventional bus and allows passengers to take in the sights of the city at a leisurely pace. Each bus is equipped with an electric lift at the rear to enable easy access for wheelchair users.



In the event of an earthquake or other disaster, the large amount of electricity stored in the battery of this mobile power source vehicle can be used to recharge approximately 2,500 smartphones or for emergency lighting. This vehicle would be useful in an emergency since it can drive itself to an evacuation center or another location where power is needed.

## Roadside Station: Kurukuru Naruto

Naruto City, Tokushima Prefecture  
<https://www.kurukurunaruto.com/>



As a hands-on, food-oriented theme park, this roadside station has facilities for selling goods, dining, disseminating information, and a children's playground. It promotes a dynamic atmosphere and makes the town more appealing.

Built at a height to protect against tsunamis, the rooftop can function as an evacuation site. After a tsunami recedes, the facility would be able to accommodate many people indoors and supply them with food.



In daily lives

A rooftop plaza that can be accessed via a ramp

The rooftop features a grass-covered area and playground equipment thematically based on famous products unique to Naruto. You can enjoy reaching the rooftop via a ramp covered with artificial turf, which should attract people looking for a children's playground or for a place where adults can relax.



In irregular situations

A rooftop built at a height to protect against tsunamis can function as an evacuation site in the event that a tsunami arrives. The ramp to access the rooftop allows anyone (barrier-free) to quickly (without getting lost) go up to the rooftop at any time (24 hours a day).



In daily lives

A large quantity of products on display

Large quantities of many types of products can be displayed inside the facility through the use of compressed shelving. This makes the shopping experience fun and lively.



In irregular situations

A large number of products in the facility can be used for food and as relief supplies in the event of a disaster. This location is stocked with enough food to feed approximately 1,000 people for 3 whole days.

## Toshima Midori Disaster-Prevention Park: IKE • SUNPARK

Toshima City  
<https://ikesunpark.jp/>



With a plaza, café, power source, and rows of trees, the park serves as a recreational space and an event venue for visitors.

Serves as an evacuation site, a heliport, or a depot for disaster supplies. Also equipped with an emergency power supply, along with various facilities to support evacuees.



In daily lives

As the largest park by area in Toshima City, this park features a vast grass-covered plaza, rows of cherry, ginkgo, Japanese white oak trees, a café, a well, and more. Serves daily as a place for local residents to relax and to create a vibrant community. Also equipped with a power supply on site for hosting various events. The rows of oak trees can serve as a firebreak in case of emergency.



In irregular situations

**Plaza:** Serves as an evacuation site, heliport, and depot for the collection and distribution of relief supplies.



**Café:** Can serve meals and provide water.



**Well:** Supplies water for firefighting and domestic use.

## The Complex of Town Hall and Disaster Management Base: Watashino

Koshimizu Town, Hokkaido  
<https://watashino-koshimizu.jp/>



By bringing together various facilities that support daily lives in one venue, the town hall has become a vibrant yet relaxing place where people gather.

The government building will be used as an evacuation center in the event of a disaster. Each facility will help make living as evacuees more comfortable.



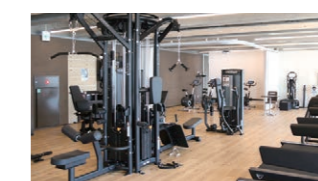
In daily lives

Watashino functions as a town hall as well as a home to a café, laundry, fitness gym, studio, and other facilities used for daily living situated around its center. This creates a vibrant community setting where people can actively interact with one another and relax. Getting people of all ages to engage in conversation across generations also helps reinvigorate the local community.



In irregular situations

**Café:** Functions as a place where meals can be prepared and a warehouse for the stockpiling of goods.



**Fitness gym & studio:** Provides a warm space for sheltering and showers. Also great for maintaining health while living as evacuees.



**Laundry:** A hygienic environment is maintained, such as by ensuring an emergency water supply and supplying emergency power for washing clothes.

# Imabari City Waste Management Center: BARI CLEAN

IMABARI CITY/TAKUMA CO., LTD.  
<http://bariclean.jp/>



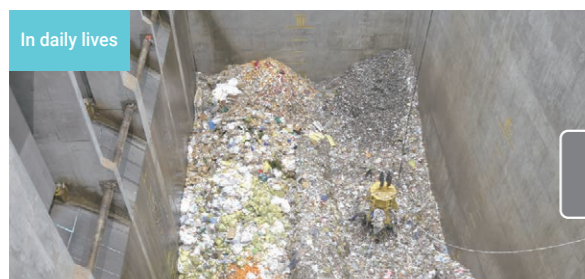

Waste is safely and reliably treated at this waste treatment facility. Also open to the public as a venue for sports and events and is a popular location in the community.

Functions as an evacuation center in an emergency, and is always stocked with food and water. A unique business plan has also been developed to maintain waste disposal capabilities.



A stable supply of power is provided to the local community by using waste to generate electricity. The environmental impact is also reduced.

Electricity would still be made available within the facility in the event of a power outage to support plant operations and the welfare of evacuees.



A large pit for storing waste has been designed. A large pit is used to thoroughly agitate and homogenize the waste, thereby improving combustion efficiency.

This pit can also hold waste generated during a disaster and waste generated at the evacuation center.



This room is open to the public and used for sports activities and events.

Serves as a shelter in a disaster. Electricity, air-conditioning, and bathing facilities are available for comfortable stay.

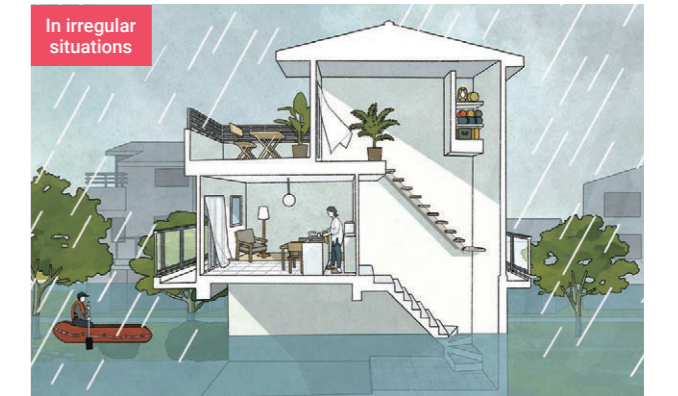
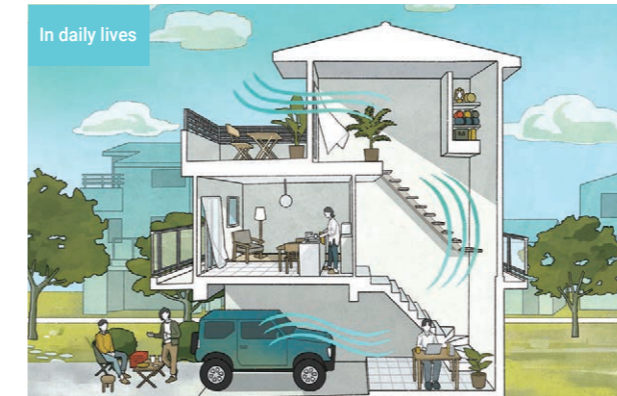
# Bo-ku-Lab Lease NIIMO

Daito Trust Construction Co., Ltd.  
<https://www.kentaku.co.jp/estate/dk-select/story/collabo03/>



A three-floor, open-plan home that allows the breeze and light to pass through. Helps people to lead healthy lives while enjoying nature.

Various innovations designed to cope with flooding support life in the event of a disaster.




A three-floor maisonette in which a pleasant breeze and light passes through. The bright and open design with many openings supports healthy living by reducing humidity while still savoring nature. The reinforced-concrete piloti structure on the first floor can be used in many ways, such as a covered parking area or free space. The second and third-floor balconies that let in generous breeze and copious light are available for hanging laundry or bedding. Each room has storage space for large amount of items such as camping equipment.



To ensure safe living when flooding occurs due to typhoons or other causes, the first floor is designed as a space to accommodate water about 1.5 meters above ground level. The second floor and above have all the essential functions, including outdoor units of air conditioners, and serve as space for evacuation at home. Food and goods stored in large storage spaces will support evacuation life. The second and third-floor balconies are also designed for evacuations by boat or rescue by helicopter if there is flood damage. Even after a flood subsides, the structure is built to allow air and light to pass through, enabling the entire home to dry and recover from damage quickly.

# UZUHALL

Naruto City Public Enterprises Bureau  
<https://uzupark.com/uzuhall/>



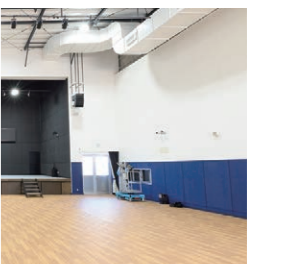
A multipurpose hall with one of the largest free-of-charge bouldering facilities in Japan.

Serves as an evacuation space in a disaster. The cushions used for bouldering can be converted into beds.



Uzu Hall is a multipurpose hall featuring a bouldering facility along one wall. Comprising as many as fifty-nine courses in total, this free bouldering facility is among the largest in all of Japan. The hall itself can be used as a gymnasium or event venue or for a variety of other purposes.

This facility can be used as an evacuation center capable of accommodating many people in the event of a disaster. The cushions in the bouldering facility can be converted into beds to help support evacuees. Parts of the walls of the hall are painted in two colors, suggesting the height of flooding that might occur in the event of a tsunami. This could, along with the design, heighten awareness for disaster prevention.



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**PHASE FREE for the WORLD Website**  
<https://phasefree.world/>



**Phase Free Concept Website**  
<https://phasefree.org/>



**Phase Free Comprehensive Website**  
<https://phasefree.net/>



**Phase Free Design Case Study Website**  
<https://dcs.phasefree.net/>



Each time we are faced with a societal problem that cannot be addressed using a conventional approach, we have created a new concept or language to find a solution. For example, the concept of an eco-based approach was adopted to address environmental issues and the concept of universal design was adopted to address welfare issues. These new ways of thinking made it much easier to tackle these issues.

We are presently facing the major problem of how to address recurring damage caused by climate change and a wide variety of other crises. This quandary can be solved by introducing the new Phase Free concept, which refers to goods and services that are useful in both daily lives and irregular situations. We would like to share this initiative, which is open to everyone, with people all over the world and create a planet in which everyone can be happy at all times. This is what prompted us to publish this book.

A Phase Free society in which we can live prosperously without anxiety, both in our daily lives and in irregular situations.

We invite you to join us.

**From where will your  
 Phase Free journey begin?**



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