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(54) MOBILE SYSTEM SUITABLE FOR DEMOLITION WORK

(57) The invention relates to the field of demolition work. In particular, the invention provides a mobile system for demolition work. The invention also relates to a method for delimiting demolition work.

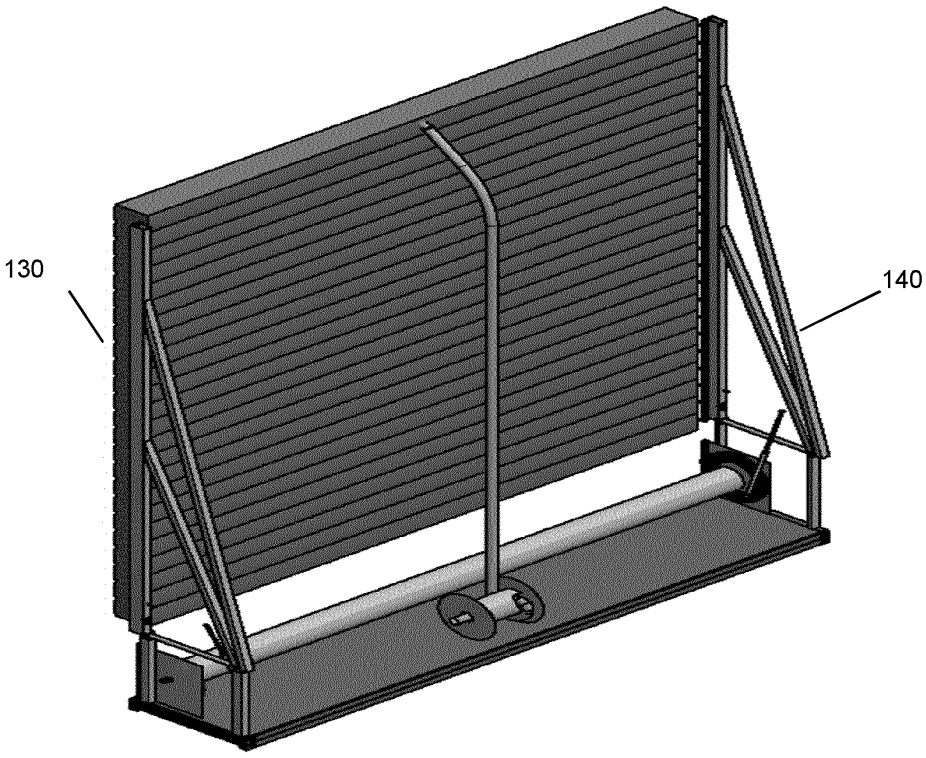

FIG. 1

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Description

TECHNICAL FIELD

[0001] The invention relates to the field of demolition work. In particular, the invention provides a mobile system suitable for demolition work. The invention also relates to a method for delimiting demolition work, as well as other instances, such as temporary struts after fires, earthquakes, explosions and natural disasters.

TECHNICAL BACKGROUND OF THE INVENTION

[0002] The terms demolishing, pulling down or razing refer to the demolition of a movable or immovable property into smaller components which can then be removed. Preferably, demolition work is carried out using (heavy) vehicles, such as a demolition crane or wrecking ball which mechanically pull down the building structures to be demolished.

[0003] However, in urbanized and industrial regions, the demolition sector is confronted with sites where demolition by means of machines is not possible. In a residential area, there is often insufficient space to place the required machinery and to catch falling debris in an adequate manner. As a result thereof, it is often decided to pull down the building structures by hand. This typically takes place by erecting a scaffold against the building structure to be demolished, which can then be pulled down manually by workers (row by row).

[0004] However, manual demolition is an inefficient, expensive and risky approach. Often, manual demolitions are associated with a larger risk of accidents, since everything has to be carried out on a smaller surface area. The danger relates to a building collapsing or falling, falling debris and exposure to harmful substances, such as asbestos and quartz dust.

[0005] In addition, placing a scaffold also means that the scaffold has to be anchored to the structure to be pulled down. After all, the scaffold is not reliable and susceptible to the wind. This produces an additional risk. In case the walls are old, it is possible for relatively large parts to suddenly break loose during demolition work, as a result of which the scaffold is taken down with them. Any workers which might be on the scaffold in such a moment, thus run an additional risk. Also, anchoring the scaffold to the wall at an elevated level is problematic if that very same wall is to be demolished.

[0006] In addition, constructing and taking down a scaffold is very labour-intense. A scaffold is also prone to accidents: if, for example, a (demolition) crane hits the scaffold, this may cause a pipe to bend, which may render the entire scaffold unstable.

[0007] As a result, pulling down building structures is dangerous and specialised work. Traditionally, the scores of the demolition sector with regard to industrial accidents are worse than the average of the entirety of the building industry. More particularly, this means that not only the frequency rate is worse, but also the degree of severity. For example, studies show that there were a total of 22 fatal industrial accidents in the Belgian building industry in the year 2009 at an employment figure of 154,200 FTEs (1 for every 7,000 FTEs). In the sector of demolition work, the number of fatal industrial accidents over the same period was 2 per 5,000 FTEs, or 1 for every 2,500 FTEs.

[0008] There is therefore a need for a system which offers a solution to one or more of the aforementioned problems.

SUMMARY

[0009] The present invention and the preferred embodiments thereof aim to offer a solution to one or more of the abovementioned drawbacks. To this end, the present invention relates to a mobile system for demolishing a building structure. The invention also provides a method for demolishing a building structure.

[0010] In a first aspect, the invention relates to a mobile system suitable for demolition work, the mobile system comprising the following:

- a container with telescopic support elements;
- an inflatable screen provided in the container; and,
- at least two guides for guiding the inflatable screen.

[0011] In some preferred embodiments, the inflatable screen comprises an inflatable cushion.

[0012] In some preferred embodiments, the screen is made of PVC.

[0013] In some preferred embodiments, the inflatable screen is provided with a friction-reducing and/or crack-reducing coating.

[0014] In some preferred embodiments, the system comprises a screen-inflating means; preferably an air pump.

[0015] In some preferred embodiments, the screen comprises a pressure-relief feature.

[0016] In some preferred embodiments, the screen is attached to the guides.

[0017] In some preferred embodiments, the guides have a maximum adjustable height of at least 1.0 m to at most 50.0 m.

[0018] In some preferred embodiments, the guides comprise a drive means; preferably an electrical or hydraulic drive.

[0019] In some preferred embodiments, the support elements have a length of at least 1.0 m to at most 3.0 m.

[0020] In some preferred embodiments, the support elements are supporting legs.

[0021] In some preferred embodiments, the system comprises a stabiliser.

[0022] In some preferred embodiments, the system comprises an atomising installation.

[0023] In some preferred embodiments, the system comprises a noise-reducing means.

[0024] In some preferred embodiments, the at least two guides are telescopic and/or foldable.

[0025] In a next aspect, the invention relates to a method for delimiting demolition work, the method comprising the steps:

(a) placing a mobile system as described herein, preferably near demolition work;

(b) placing the telescopic support elements in a supporting position;

(c) folding out a guide, preferably the two guides;

(d) adjusting the height of an inflatable screen, preferably by means of a beam or bar; and,

(e) inflating the inflatable screen.

[0026] In some preferred embodiments, the height of the inflated screen is gradually reduced, so that the demolition work on one side and the screen on the other side are at approximately the same height.

[0027] In a next aspect, the invention relates to a method for taking down the mobile system as described herein, the method comprising the steps:

(a) deflating an inflatable screen;

(b) rolling up or folding up the inflatable screen into the container;

(c) taking down and storing the guides in the container;

(d) placing the telescopic support elements in or against the container; and,

(e) optionally, shutting off the container.

[0028] In some preferred embodiments, the mobile system is transported by means of transport.

[0029] In a next aspect, the invention relates to a use of a mobile system as described herein for delimiting demolition work.

[0030] Such a mobile system partly solves the above-mentioned problems of conventional scaffolds. Such a mobile system also has the advantage that it can be moved, as a result of which only relatively small surface areas are required. By systematically moving the mobile system as the demolition work proceeds, its use results in a saving in material and costs. Such a mobile system also has the advantage that it can readily be transported and/or moved, requiring fewer vehicles.

[0031] In addition, such a mobile system is efficient: no roads have to be closed off and no traffic has to be stopped. The mobile system results in less dust and fewer loose pieces of debris. The mobile system omits the need for a hoisting crane. The mobile system is more resistant to wind, for example to winds of forces up to 8 Beaufort.

DESCRIPTION OF THE FIGURES

[0032] In order to show the characteristic features of the invention in a more satisfactory manner, some preferred embodiments of the present invention are described in the attached figures, without any limiting nature. The reference numerals are discussed in greater detail in the examples. Throughout the figures, claims and examples, the following numbering is used: 100 - mobile system; 110 - container; 120 - support elements; 130 - inflatable screen; 140 - guides.

[0033] **Fig. 1** shows a diagrammatic illustration of a part of a mobile system according to a preferred embodiment

[0034] The inventors have discovered that the mobile system as described herein can offer the following advantages:

- improved safety conditions, such as:
  - no need for building and taking down scaffolds; and/or,
  - no need for working with a jumping cushion;
- dust control; and/or,
- quicker dismantling options.

[0035] As a result of this container, it is possible to pull down walls which should in fact be demolished manually by means of a machine, because the container provides a closed safety screen, as a result of which falling debris cannot end up outside the work zone. Furthermore, it is no longer necessary to construct a scaffold alongside the wall to be pulled down and workers no longer have to get up onto the scaffold in order to demolish the wall row by row.

[0036] As the demolition work continues, the inflated screen (which is divided into compartments from which the air can be removed individually) may, in some embodiments, be gradually rolled up so that the wall to be pulled down on one side and the buffer cushion on the other side are always at the same height.

[0037] In addition, when placing a traditional scaffold, the scaffold still also has to be anchored in the wall to be pulled down, which creates an addition risk. Due to the age of the walls, it is possible that relatively large pieces suddenly become dislodged, as a result of which the scaffold may collapse if this section of wall comes down. Workers which are busy demolishing a wall on the scaffold thus run an addition risk which can now be prevented by using the container. The reason for this is that the

container is not anchored in the wall and no one has to stand on top of it in order to be able to carry out the demolition work.

[0038] A jumping cushion or jumping mat is no longer required either. The existing unstable and cumbersome principle consists in creating a rubber jumping mat (± 120m^2 with a weight of 4 tons). When hauling up the jumping mat, which is only attached at the top, it may catch a lot of wind and this may cause adverse situations. The entire process therefore takes a lot of energy and effort to ensure everything run smoothly. As the curtain "hangs" loosely, as it were, and does not adjoin the building closely, there is a risk that large pieces of debris may push the jumping mat in the wrong direction in an uncontrollable way. The container solves this problem by the fact that, contrary to the jumping mat, it can be placed very close to the wall to be pulled down. In fact, the cushion is inflated until it bears against the wall and thus provides a slight counterpressure. Thus, the pieces of debris will always fall towards the inside of the work zone and the problem of pieces of debris falling on, for example, public roads is significantly reduced. An additional problem when using a jumping mat is the fact that it has to be placed at height on a building site, as a result of which a scaffold has to be used again when taking it down.

[0039] Since the environmental law also requires dust control measures to be taken during demolition work, an atomizer is usually chosen to make the dust settle more quickly and the ground is also made moist. Here, the container also offers a solution in the sense that the inflatable cushion ensures that the area behind the wall to be pulled down is completely closed. This thus provides the same effect as a scaffold from which a screen has been hung. But with the container, the work of having to hang these screens from the constructed scaffolds can also be omitted. By carrying out a demolition using the container, workers are no longer exposed to dust either. After all, when performing demolition work on a scaffold, workers are constantly exposed to dust, in particular if the scaffold has also been closed off with sheeting to prevent the dust from spreading outside the work zone.

[0040] Due to the fact that it is no longer necessary to construct a scaffold, fewer dust control activities have to be carried out and fewer workers have to be provided, the user may assume that a demolition can be carried out more quickly and less expensively and that, in addition, significantly fewer logistic processes have to be organised. In essence, the cushion container replaces the scaffold and screens and requires significantly less preparation time before the actual demolition work can be started.

DETAILED DESCRIPTION

[0041] Before the present system and method according to the invention are described, it should be understood that the present invention is not limited to specific described systems and methods or combinations, since such systems and methods and combinations may obviously vary. It should also be clear that the terminology used herein is not intended to be limiting, since the scope of the present invention is only limited by the attached claims.

[0042] All the documents cited in the present specification are incorporated herein in their entirety by way of reference.

[0043] As used below in this text, the singular forms "a", "an", "the" include both the singular and the plural, unless the context clearly indicates otherwise.

[0044] The terms "comprise", "comprises" as used below are synonymous with "including", "include" or "contain", "contains" and are inclusive or open and do not exclude additional unmentioned parts, elements or method steps. The terms "comprise", "comprises" are inclusive of the term "contain".

[0045] The enumeration of numeric values by means of ranges of figures comprises all values and fractions in these ranges, as well as the cited end points.

[0046] The term "approximately" as used when referring to a measurable value, such as a parameter, an amount, a time period, and the like, is intended to include variations of +/- 10% or less, preferably +/-5% or less, more preferably +/-1% or less, and still more preferably +/-0.1% or less, of and from the specified value, in so far as the variations are applicable to function in the invention disclosed herein. It should be understood that the value to which the term "approximately" refers per se has also been disclosed.

[0047] In the following passages, different aspects of the invention are defined in more detail. Each aspect so defined may be combined with any other aspect or aspects unless clearly indicated to the contrary. In particular, a feature indicated as being "preferred" or "advantageous" may be combined with other features or properties indicated as being "preferred" and/or "advantageous". Reference throughout this specification to "one embodiment" or "an embodiment" means that a particular feature, structure or characteristic described in connection with the embodiment is included in at least one embodiment of the present invention. Appearances of the phrases "in one embodiment" or "an embodiment" in various places throughout this specification do not necessarily refer to the same embodiment, but may. Furthermore, the described features, structures or characteristics may be combined in any suitable manner, as would be apparent to a person skilled in the art on the basis of this description. The embodiments described and claimed in the claims may be used in any combination. In the present description of the invention, reference is made to the accompanying drawings that form a part thereof, and in which specific embodiments of the invention are shown by way of illustration. Parenthesized or emboldened reference numerals affixed to specific elements illustrate the respective elements by way of example, without limiting said elements as a consequence. It is to be understood that other embodiments may be uti-

lised and structural or logical changes may be made without departing from the scope of the present invention. The following detailed description, therefore, is not to be taken in a limiting sense, and the scope of the present invention is defined by the appended claims.

[0048] Unless otherwise defined, all terms used in disclosing the invention, including technical and scientific terms, have the meaning as commonly understood by someone skilled in the art. By means of further guidance, definitions are included to further explain the terms which are used in the description of the invention.

[0049] As used herein, the term demolition work refers to a structure such as a movable or immovable property which has to be demolished or pulled down. The mobile system described herein is not limited to a certain demolition method or demolition tool. However, it should be understood that the present demolition method is highly suitable for demolition work by means of (heavy) vehicles, such as a demolition crane or wrecking ball which create large amounts of falling debris and/or dust.

[0050] The demolition work will typically take place on a building site. As used herein, the term building site refers to a plot where building construction is taking place or which is suitable for building. A building site therefore also refers to a construction site, construction lot or building location.

[0051] In a first aspect, the invention relates to a mobile system for demolition work, the mobile system comprising:

- a container with telescopic support elements;
- an inflatable screen provided in the container; and,
- at least two guides for guiding the inflatable screen.

[0052] The mobile system has two forms. In a first transportable form, the screen, the support elements and the at least two guides are provided in or against the container. As a result thereof, the extent of the mobile system in the first form is limited to the container which can easily be transported and moved by means of a means of transport such as a lorry. The size of the container is that of a typical freight container; for example a 20-foot container or a 40-foot container. A 20-foot container typically has an internal length of 5.9 metres and a volume of 33.2 m^3. A 40-foot container typically has an interne length of 12.03 metres and a volume of 67.7 m^3. Preferably, the container has an external length of at least 5 metres up to at most 25 metres, for example of at least 6 metres up to at most 15 metres. Preferably, the container has an external height of at least 2 metres up to at most 25 metres, for example of at least 2.5 metres up to at most 5 metres.

[0053] When the mobile system is placed near demolition work, such as on a building site, it can be transformed to its second static form. Preferably, the telescopic support elements are taken out of the container first. These support elements ensure that the system remains stable and cannot move. These support elements also ensure that the container can be placed level, for example on uneven terrain. Then, the height of the guides may optionally be set to the desired height; the desired height will typically correspond to the height of the demolition work, such as a wall to be pulled down. In this case, the screen will (partly) be at the same height as the guides. The screen may be pulled up together with the guides or may be pulled up after the guides have been set. The guides are preferably telescopic and/or foldable, more preferably foldable. Lastly, the screen may be inflated in order to form a safety screen suitable for catching falling rubble, such as a part of a building, falling debris and/or fine dust. Preferably the guides are unfolded first, after which the screen is pulled up and then inflated.

[0054] As the demolition progresses, the height of the inflated screen can gradually be reduced, so that the structure to be pulled down on one side and the screen on the other side are always at the same height. The support elements are preferably hydraulically actuated. In some embodiments, the cushion has adjustable pressure levels, for example 2 or 3 adjustable pressure levels. This makes it possible for the cushion to sink, for example over a distance of 1 metre. Thereafter, the pressure may be increased again. The screen preferably comprises valves and/or pressure relief valves in order to control the height of the unit and/or to roll up the unit. In some embodiments, the screen has various sections. By allowing air to escape from one or more sections, the screen can be lowered. In the second form, the mobile system essentially forms a closed space, as a result of which falling debris and/or dust cannot end up outside the demolition zone. This makes it possible to pull down walls which should in fact be pulled down manually by means of a machine. As a result thereof, it is no longer necessary to construct a scaffold alongside the structures to be pulled down. Neither is there therefore any need for workers to get up onto the scaffold in order to demolish the structure manually (row by row). In addition, it is not necessary to anchor the mobile system to the structure, as a result of which there is no risk of collapsing walls or scaffolds.

[0055] The entire mounted structure may occupy a surface area of at least 10 m^2 and at most 675 m^2, preferably at least 15 m^2 and at most 500 m^2, for example at least 20 m^2 and at most 200 m^2, for example at least 30 m^2 and at most 100 m^2, for example at least 40 m^2 and at most 60 m^2.

[0056] The container as such is already easy to maintain. Preferably, the mechanical parts of the container are accessible, for example in order to be able to remove dust and bricks. In some embodiments, the container comprises one or more doors, for example on the sides of the container.

[0057] Preferably, the mobile system comprises 4 support elements, preferably on each corner of the container. Preferably, the support elements result in a wider surface

area, resulting in a stable container.

[0058] The support elements serve to support the mobile system on the ground. The support elements may optionally be anchored. Anchoring will typically be effected using anchoring elements (e.g. screws, anchor points and the like). The support elements may be pulled out and attached manually or may be pulled out by machine, for example by means of an electrical or hydraulic system. The support elements are preferably supporting legs. The support elements are preferably made of a metal such as steel.

[0059] The support elements have a height of preferably at least 0.2 m to at most 2.0 m, for example of 0.4 m to 1.6 m, for example of 0.8 m to 1.2 m. The support elements preferably have a width which is smaller than or equal to the width of the container. In some embodiments, the support elements are slanted which ensures that they can be retracted in a compact manner.

[0060] In some embodiments, a support element has a length of at least 1.0 m to at most 3.0 m. The length of the support element is defined as the distance of one end of the support element to the second end of the support element. The length of a support element may optionally be adjustable; in which case the maximum length is defined when the support element has been completely pulled out.

[0061] The guide guides the inflatable screen to the desired height and subsequently serves as a support for the screen on the container. The guide is preferably anchored or attached to the container. The guide comprises a body which preferably consists of a single coherent whole. Alternatively, the guide may be of modular construction, comprising a series of bodies which are connected to each other. The guide is preferably made of a metal; such as steel. In some embodiments, the at least two guides are telescopic and/or foldable, more preferably foldable.

[0062] In some embodiments, the guide may be adjusted in height manually, for example by means of a telescopic system. Preferably, the height of the guide is adjusted by machine, for example by means of an electrical or hydraulic system. Preferably, the mobile system comprises at least two height-adjustable guides for guiding the inflatable screen. The use of two guides makes it possible to reinforce the edges of the screen in a more secure way. The more guides are provided, the stronger the reinforcement of the screen becomes, but also the more expensive the system becomes. The use of two guides is an optimum balance between strength and cost price.

[0063] In some embodiments, the guide has a maximum adjustable height of at least 1.0 m to at most 50.0 m. The maximum height of the guide is defined as the distance from one end of the guide to the second end of the guide when the guide has been completely pulled out or unfolded, preferably unfolded. In some embodiments, the system also comprises cables and/or bars which provide additional strength. This provides good tension between the two foldable guides.

[0064] The deflated screen fits into the container. The screen will preferably be folded in or rolled up. This makes it possible to move the system to another building site quickly and easily. The screen is preferably wear-resistant, tear-resistant and/or replaceable. In some embodiments, the system comprises a beam or bar which is configured to pull the top side of the screen up. This beam or bar can also be raised via the guides, for example by means of wheels in a profiled section.

[0065] The inflated screen preferably forms a safety screen or safety cushion for catching debris and/or dust. It should be understood that the screen is then thus suitable for catching debris without causing (significant) damage; it is preferably made of a material which does not break or tear upon contact with falling debris. The screen is preferably made of a polymer, preferably PVC, preferably UV-resistant PVC. The thickness of the inflated screen is preferably at least 40 cm and at most 120 cm, preferably at least 60 cm and at most 100 cm, for example approximately 80 cm. These materials are suitable for preventing tears when catching debris comprising bricks or metal. The screen may be provided with a friction-reducing and/or tear-reducing coating. The screen may comprise an inflatable cushion. By providing a separate inflation space within the screen, the risk of tears is further reduced.

[0066] The inflatable screen preferably comprises an inflatable cushion, preferably a cushion which can be inflated and rolled up, along one side of which (preferably the outer side) sheeting is attached. This sheeting is preferably tear-resistant and/or replaceable. This sheeting may, for example, be attached to the cushion by means of a hook and loop fastener (Velcro).

[0067] The system is preferably provided with a means for inflating the screen; a screen-inflating means. This may be, for example, an air pump or compressor. The pump preferably has a low (preferably adjustable) pressure and a high flow rate, such as the pump for a bouncy castle. Once inflated, the screen is preferably kept at a constant air pressure. This is possible by providing it with a continuous supply of air; for example by means of ventilating fans. Alternatively, this may be possible by completely sealing the screen in an airtight manner, so that no air can escape; for example by means of valves. The screen is preferably provided with a pressure-relief feature; preferably a bending system. If the screen were to hit something, such as the demolition crane, this could snap.

[0068] The screen is attached to the guide. Preferably, the screen is connected to the guide by means of a guiding system. In some embodiments, the guiding system comprises wheels in a profiled section. The screen may be connected to the wheels, preferably in a removable manner. This ensures that the screen can easily be replaced. The attachment may be temporary or permanent. The advantage of a permanent attachment is that the screen can immediately be taken to the desired height.

The advantage of a temporary connection is that the screen can be uncoupled, so that the guide can be adjusted first before the screen is then pulled up. A temporary connection also makes it possible to house the guide and the screen in the container in a more compact way.

[0069] In the present description, the inflated screen is sometimes also referred to as "safety cushion" or "buffer cushion". In some embodiments, the safety cushion is divided into compartments which can be deflated separately. As a result, it can be rolled up gradually, so that the wall to be pulled down on one side and the safety cushion on the other side are always at the same height. In some embodiments, the screen is provided with a multi-channel system which leads directly to the various compartments. These channels may be incorporated structurally on the inner side of the safety cushion and be made from the same material. Each compartment can then be deflated individually by means of an air valve. In some embodiments, the screen automatically slides along downwards during the demolition. In some embodiments, the cushion is provided with a multi-channel system which leads directly to the various compartments. These channels may be incorporated structurally on the inner side of the buffer cushion and be made from the same material. Each compartment can then be deflated individually, for example, by means of an air valve.

[0070] In some embodiments, the inflated screen is convex. This ensures that there is no gap when two containers are side by side.

[0071] The system may be provided with a means for noise reduction, for example sheeting. This makes the system highly suitable for demolition in urban environments with stringent noise regulations.

[0072] The system may be provided with a stabiliser. This would make it possible to stabilize the screen in case of strong wind and/or heavy rain.

[0073] The system may be provided with an atomizing system. By spraying atomized water (mist), the amount of fine dust in the air can be limited or even prevented. Preferably, this atomizing system is installed in a top beam or bar which pulls the screen along. In or on this beam or bar, spray heads may be installed. Optionally, an atomizing system may also be provided on the sides. This may be installed on the guides. Preferably, the connection for the water is provided at the bottom, for example in or on the container. Optionally, the container comprises a water tank.

[0074] In a further aspect, the invention relates to a method for delimiting demolition work. To this end, the mobile container as described above comprises a mechanism which makes it possible to unroll a safety cushion against a wall to be pulled down. The container is preferably placed alongside the wall to be pulled down, following which the as yet uninflated safety cushion can be unrolled upwards by means of a simple control system. This operation can be performed with great accuracy, so that the system can be used in an optimum manner. Once the safety cushion has been unrolled, it can be inflated against the wall in order to provide a certain degree of counterpressure.

[0075] Preferably, the container is placed on site by means of a lorry, for example at approximately 80 cm from the wall to be pulled down. The support elements, preferably extendable legs, are brought into position; once the container has been placed, it can still be moved in the direction of the wall to be pulled down (for example up to at most 1 metre).

[0076] Then, preferably two guides slide out of the container via a hydraulic system. The screen which can be rolled up is pulled upwards via these two guides until it reaches the required height (for example the height of the wall to be pulled down). Finally, the cushion which is attached to the screen is inflated (for example in several compartments) until it makes contact with the wall and thus exerts a slight counterpressure. During demolition, the screen gradually moves back down.

[0077] In some embodiments, the method comprises the steps:

(a) placing a mobile system according to one or more embodiments as described herein, preferably near demolition work;

(b) placing the telescopic support elements in a supporting position;

(c) folding out a guide, preferably the two guides;

(d) adjusting the height of an inflatable screen, preferably by means of a beam or bar; and,

(e) inflating the inflatable screen.

[0078] Preferably, the inflatable screen is unrolled against a wall to be pulled down. The container is placed alongside the wall to be pulled down, following which the as yet uninflated inflatable screen can be unrolled upwards by means of a simple control system. This operation can be performed with great accuracy, so that the system can be used in an optimum manner. Once the inflatable screen has been unrolled, it can be inflated against the wall in order to provide a certain degree of counterpressure.

[0079] Preferably, the container is placed on site at a distance from the wall to be pulled down. This distance is preferably at least 10 cm and at most 150 cm, for example at least 20 cm and at most 140 cm, for example at least 40 cm and at most 120 cm, for example at least 60 cm and at most 100 cm, for example approximately 80 cm The extendable legs are brought into position as support elements. Subsequently, preferably two guides slide out of the container via a hydraulic system. The screen which can be rolled up is pulled upwards via these two guides until it has reached the required height (= height of the wall to be pulled down). Finally, the cushion which is attached to the screen is preferably inflated until

it makes contact with the wall and thus provides a slight counterpressure. Thus, the pieces of debris will always fall towards the inside of the work zone and the problem of pieces of debris falling onto, for example, public roads is significantly reduced.

[0080] The maximum time period required for installation is preferably 1 hour, for example 45 min, for example 30 min, for example 15 min. This is significantly quicker than the construction of conventional scaffolds.

[0081] In some embodiments, the screen automatically moves along downwards during demolition. As the demolition progresses, the safety cushion may gradually be rolled up (for example divided into compartments which can be deflated individually), so that the wall to be pulled down on one side and the safety cushion on the other side are always at the same height.

[0082] In a further aspect, the invention relates to a method for taking down the mobile system, the method comprising the steps:

(a) deflating an inflatable screen;

(b) rolling up or folding up the inflatable screen into the container;

(c) taking down and storing the guides in the container;

(d) placing the telescopic support elements in or against the container; and,

(e) optionally, shutting off the container.

[0083] Once taken down, the mobile system can be transported or moved by a means of transport, such as a lorry, by means of a crane.

[0084] In a further aspect, the invention relates to a use of a mobile system according to one or more embodiments as described herein for delimiting demolition work.

[0085] In addition to its use for specific situations in the demolition work, the mobile system may be useful when, for example, unloading vessels in which case large amounts of dust are released (unloading soil or wood) and/or delimiting events causing noise pollution. The mobile system can thus also be used during loading and/or unloading vessels. Alternatively, the mobile system may be used to prevent noise pollution, for example during events. Preferably, the mobile system is used to prevent nuisance from dust.

[0086] Preferably, the maximum time period for installation and positioning of the container is a period of 30 minutes. With conventional scaffolds, a surface area of 140 m^2 takes approximately eight hours. Preferably, the maximum time period for pulling in the cushion is a period of 15 minutes compared to 4 hours for a traditional scaffold.

[0087] Preferably, the container is able to resist gusts of wind up to 8 Beaufort (wind load is measured on the top side of the container by means of an anemometer and/or electronic sensors). When the limit is exceeded, the buffer cushion may be lowered to an acceptable level.

[0088] Preferably, the container is stable on an unmetalled and/or sloping (for example with a slope angle of 5 degrees) surface, in which case the container is fully operational. The support elements compensate for variations and inclines in the surface.

[0089] Preferably, the container is able to autonomously perform a lateral displacement, for example over a maximum distance of 1 metre. The support elements make such a lateral displacement possible.

[0090] Preferably, the container is able to reduce the dust generation inside the zone of the container. This may be effected by means of an atomizing installation.

[0091] Preferably, the buffer cushion is completely protected against falling objects from the building to be demolished (pieces of debris, glass, steel,...). This may be achieved by using replaceable protective sheeting.

[0092] Preferably, the container creates a physically delimited zone between the public space and the work zone, in contrast with the use of traditional scaffolds with sheeting.

[0093] Preferably, the construction and operation of the container is carried out by only a limited number of people, for example by 1 person who has been specifically trained for this purpose, and preferably from ground level.

EXAMPLES

[0094] Reference is made to the figures by way of example. The embodiments illustrated in the figures are preferred embodiments of the present invention and should by no means be interpreted as a limitation.

Example 1

[0095] **Fig. 1** shows a diagrammatic illustration of a system according to an embodiment of the invention.

Claims

1. Mobile system (100) suitable for demolition work, the mobile system (100) comprising the following:

   - a container (110) with telescopic support elements (120);
   - an inflatable screen (130) provided in the container (110); and,
   - at least two guides (140) for guiding the inflatable screen (130).

2. Mobile system (100) according to Claim 1, wherein the inflatable screen (130) comprises an inflatable cushion.

3. Mobile system (100) according to one of Claims 1 or 2, wherein the screen (130) is made of PVC.

4. Mobile system (100) according to one of Claims 1 to 3, wherein the inflatable screen (130) is provided with a friction-reducing and/or crack-reducing coating.

5. Mobile system (100) according to one of Claims 1 to 4, wherein the system (100) comprises a screen-inflating means; preferably an air pump.

6. Mobile system (100) according to one of Claims 1 to 5, wherein the screen (130) comprises a pressure-relief feature.

7. Mobile system (100) according to one of Claims 1 to 6, wherein the screen (130) is attached to the guides (140), and/or wherein the guides (140) have a maximum adjustable height of at least 1.0 m to at most 50.0 m.

8. Mobile system (100) according to one of Claims 1 to 7, wherein the guides (140) comprise a drive means; preferably an electrical or hydraulic drive.

9. Mobile system (100) according to one of Claims 1 to 8, wherein the support elements (120) have a length of at least 1.0 m to at most 3.0 m, and/or wherein the support elements (120) are supporting legs.

10. Mobile system (100) according to one of Claims 1 to 9, wherein the system (100) comprises a stabiliser, and/or wherein the system (100) comprises an atomising installation, and/or wherein the system (100) comprises a noise-reducing means.

11. Mobile system (100) according to one of Claims 1 to 10, wherein the at least two guides (140) are telescopic and/or foldable.

12. Method for delimiting demolition work, the method comprising the steps:

(a) placing a mobile system (100) according to one of Claims 1 to 11, preferably near demolition work;
(b) placing the telescopic support elements (120) in a supporting position;
(c) folding out a guide, preferably the two guides (140);
(d) adjusting the height of an inflatable screen (130), preferably by means of a beam or bar; and,
(e) inflating the inflatable screen (130).

13. Method according to Claim 12, wherein the height of the inflated screen (130) is gradually reduced, so that the demolition work on one side and the screen (130) on the other side are at approximately the same height.

14. Method for taking down the mobile system (100) according to one of Claims 1 to 11, the method comprising the steps:

(a) deflating an inflatable screen (130);
(b) rolling up or folding up the inflatable screen (130) into the container (110);
(c) taking down and storing the guides (140) in the container (110);
(d) placing the telescopic support elements (120) in or against the container (110); and,
(e) optionally, shutting off the container (110);

preferably wherein the mobile system (100) is transported by a means of transport.

15. Use of a mobile system (100) according to one of Claims 1 to 11 for delimiting demolition work.

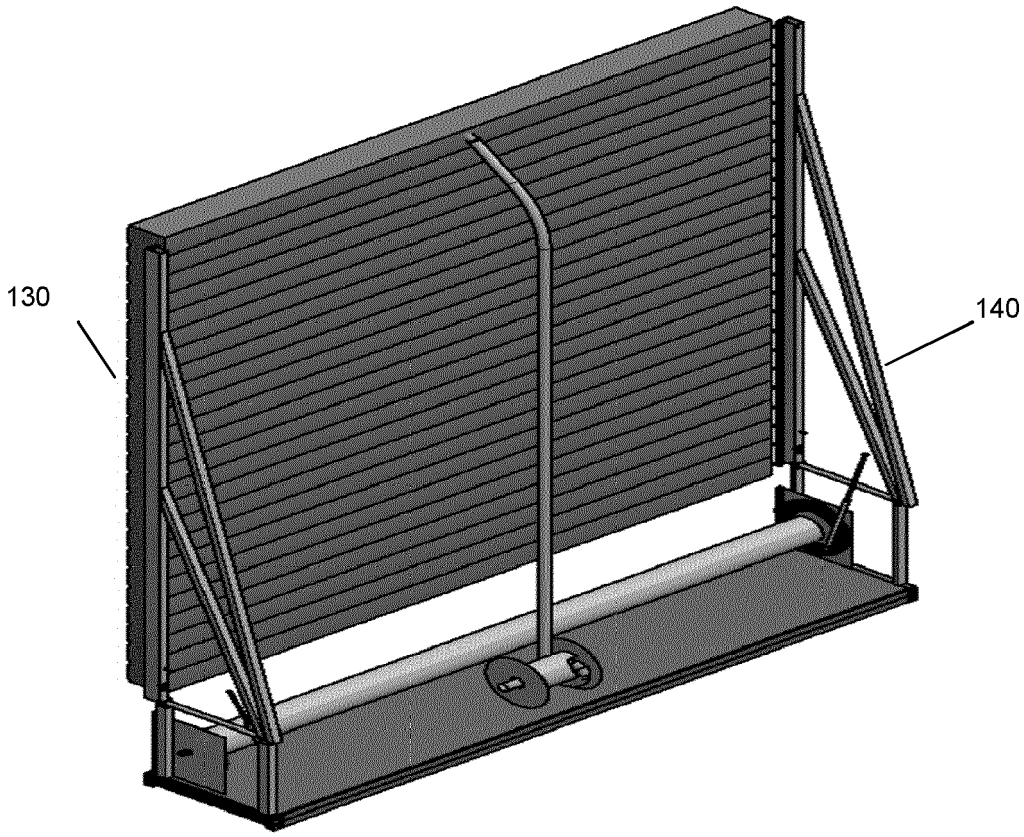

FIG. 1

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EUROPEAN SEARCH REPORT

Application Number
EP 20 17 4755

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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	24 September 2020	Demeester, Jan

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