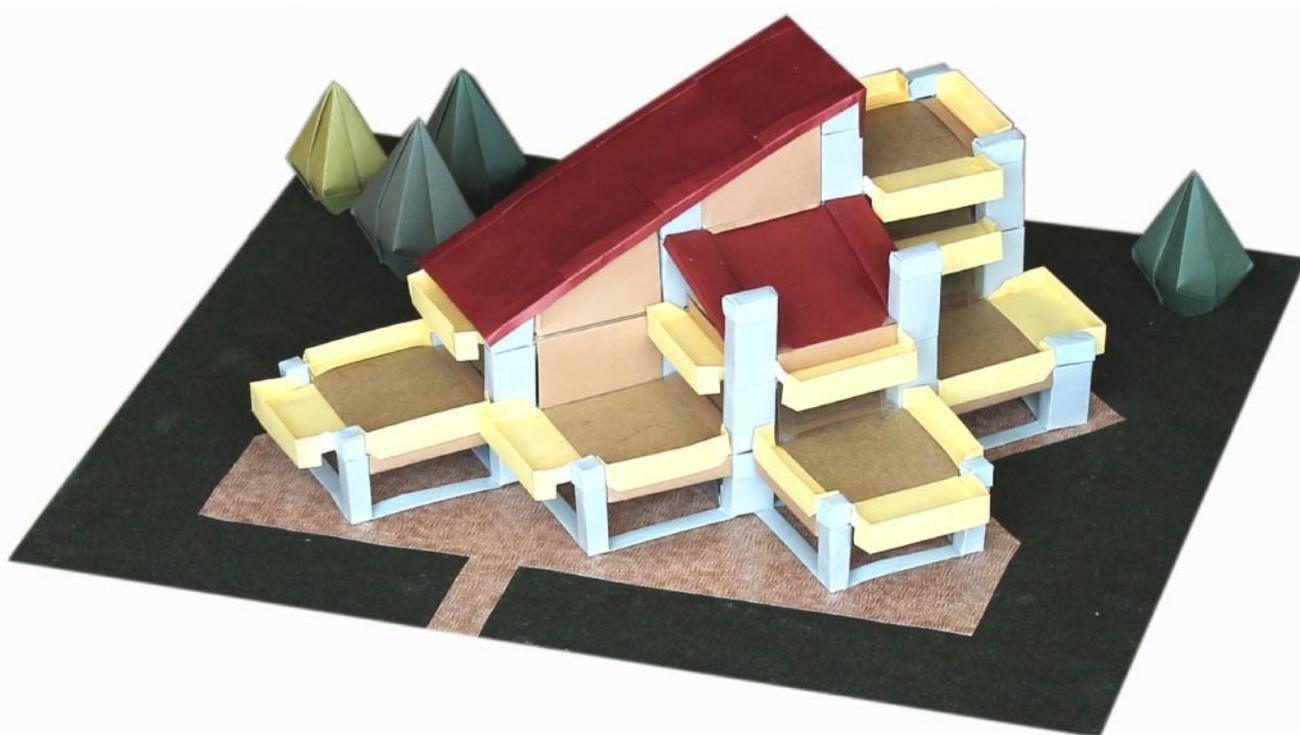


ORIGAMIST ARCHITECT

updated july 2016

MANUAL



Franco Pavarin

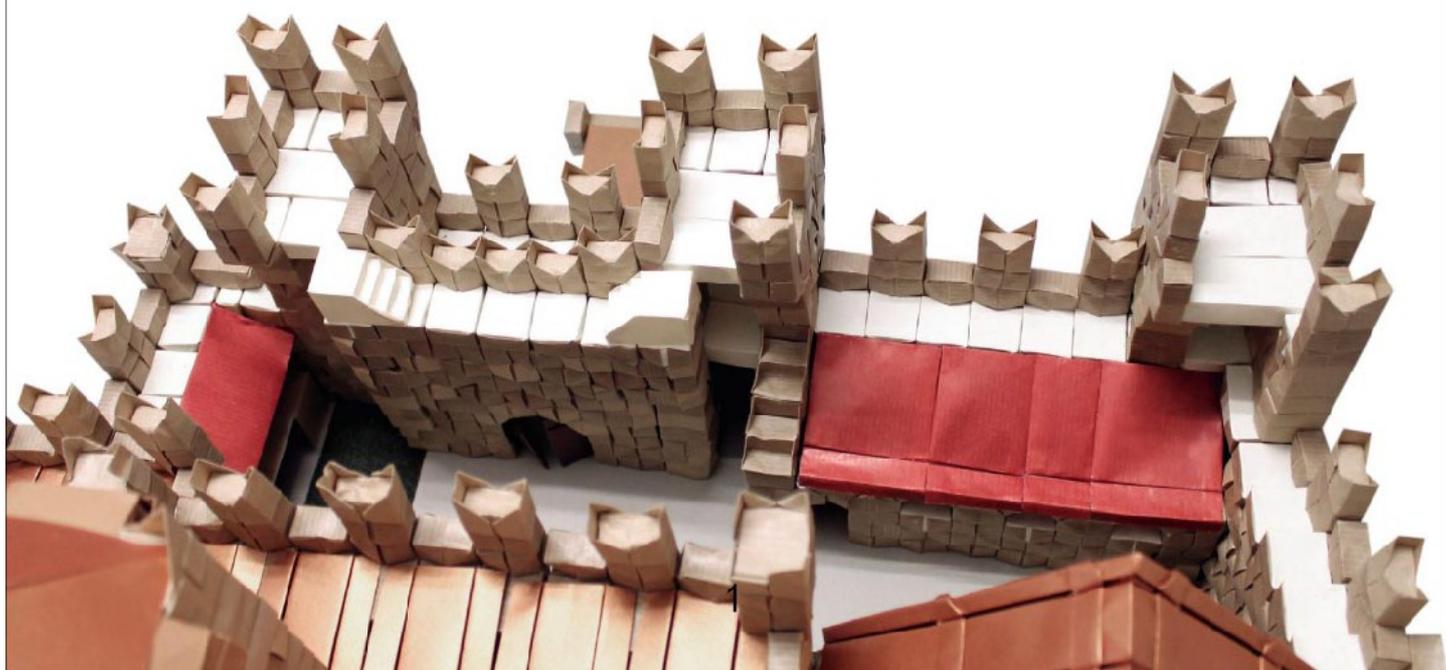
www.aereimaschereorigami.altervista.org

Translation of Andrea Pavarin

Franco Pavarin

MANUALE DELL'ARCHITETTO

ORIGAMISTA



Foreword

Nowadays origami techniques allow the realization of a lot of things, but there is still a large lacuna: no books deal with architectural structures. That's why I have written this manual.

Given the extent of the subject, I have decided to write a manual that can be periodically updated in common with other publications in the construction sector. This book incorporates my earlier manual titled "Legorigami 1" about ancient architectural structures and is now integrated with contemporary architecture.

Through my site "<http://aereiemaschereorigami.altervista.org>" I intend to continue updating this work and develop other structures, such as amphitheatres and reticulated structures.

I'm sure that many origamists will be interested in this topic, so I have translated this manual, originally written in Italian, into other languages such as English and Spanish. French is in progress.

Above all, in this book, I wish to engage upon a new path into the domain of "social" origami. By this I mean that origami techniques can be used to promote group activities in whichever context or location, by making use only of a cheap and common material: ordinary paper. In child education, for instance, origami helps children to learn the rules of collaboration and teamwork.

Currently, origami is a craft-artistic activity carried out by a small number of keen fans if we exclude lay-origamists of all ages making for fun paper airplanes or boats. However, there is a myriad of books about origami, amongst which the famous "Yunnito Origami" by Tomoko Fuse deserves to be mentioned.

"The Architect Origamist Manual" is a volume where I intend to offer some rudimentary tools to carry out activities under the supervision of a coach whose main goal is to develop in paper-folders not just manual skill and accuracy, but also logical thinking and creativity.

And in fact, once the art of block-based construction is mastered, the origamist can give free rein to his imagination creating the shapes and the objects he has chosen to construct.

So the task of the tutor would be limited to supervising the activities and intervening only for the hardest steps or the realization of unusual shapes.

Using just common sheets of paper, the tutor can explain techniques for the construction of a wide variety of buildings useful to understanding Middle Age military and religious architecture.

By this three-dimensional construction activity and learning the techniques taught in this book, the reader will witness the improvement of his manual dexterity and, even more important, will experience the enthusiasm and the excitement of creativity.

Let me explain myself better: once the procedure for carrying out blocks and basic components is mastered, the paper-folder can express his creativity, the same way one would if he had at his disposal the well-known fantastic plastic building blocks.

With the exception of circular shapes, the origamist can lay out an architectural project on a chequered paper, on which he will be able to trace the plans and the facades of a building, including complex elements, such as, for example, a church nave, a transept, an apse, a narthex or a matroneum.

June 2015

Arch. Franco Pavarin

Technical advice

Choose very resistant and heavyweight paper or chromo board paper, especially if the building blocks are large and/or meant to be used several times. For example, for the construction of the castle shown on the front cover, given the complexity of the work and the fact that once finished it had to be transported, using cutter and ruler, I have cut very small squares from packing paper of different shades, placing several sheets one on top of the other.

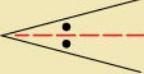
Before building the castle, I have made a freehand drawing of all the facades on a chequered sheet of paper, using the following scale of representation: 1 square = 1 metre of the actual castle = 1/8 of the 8-cm- sided square paper used to make the blocks.

So if we want to construct a building with blocks having the real dimensions, we should use square cardboards whose size is one metre on each side, and we would obtain blocks of 25x25x12.5 cm.

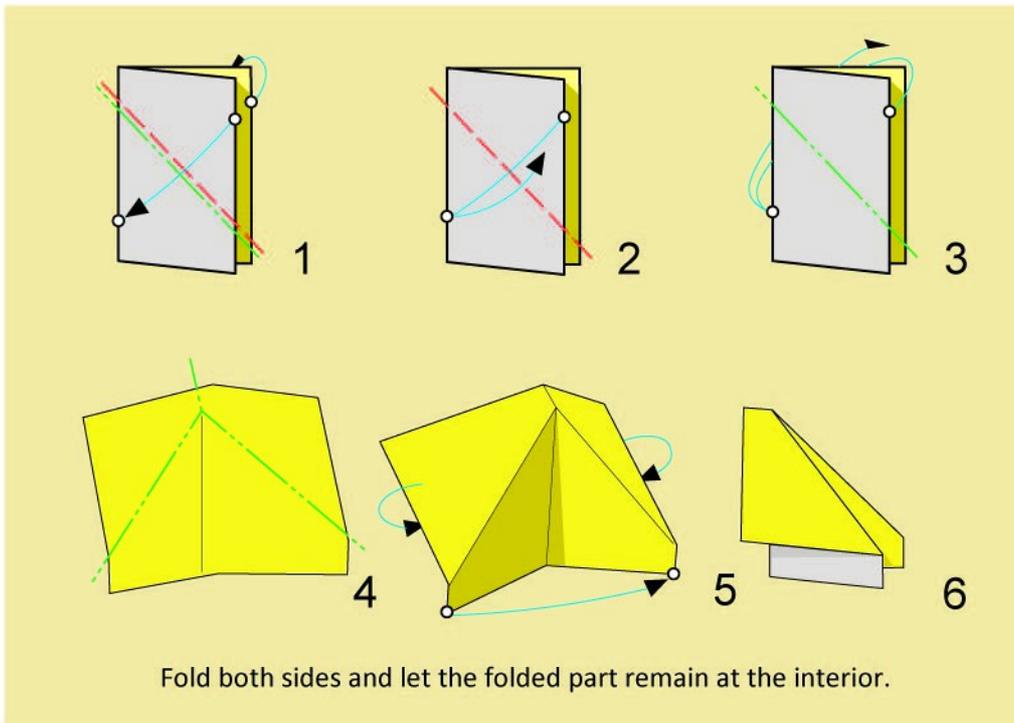
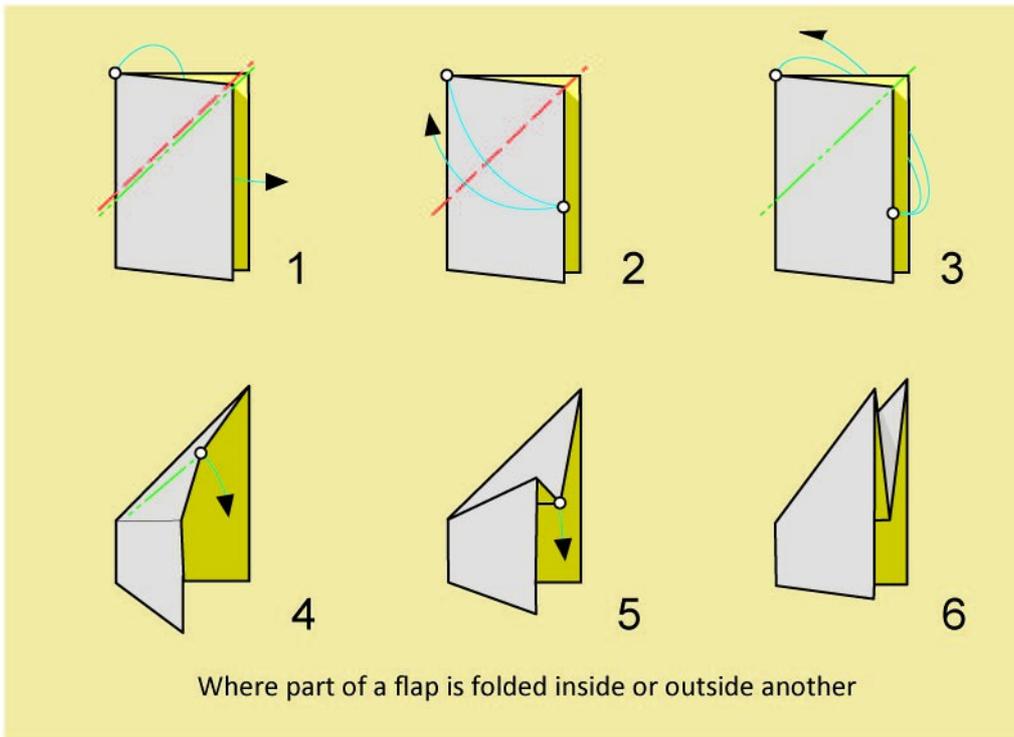
To make a square metre we need 32 blocks, i.e. $(100 \times 100) / (12,5 \times 25) = 32$. The dimension of the openings cannot exceed those of the spaces in the walls, so windows and doors will have the same width along the architrave or lintel, i.e. $25 \times 3 = 75$ cm.

Obviously, if the constructed building had more than one floor, it would not be advisable to climb to the upper floor.

SYMBOLOLOGY

	Figure	3D figure
 Valley fold (Piega a valle)		
 Mountain fold (Piega a monte)		
 Forward folding		
 Backward Folding		
 Fold and Unfold		
 Turn the paper over the vertical axis		
 Turn the paper over the horizontal axis		
 Rotate 180°		
 Bisecting valley fold		
		

MAKING INSIDE REVERSE FOLDS



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A basic block 7



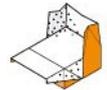
Staircase 28



A1 flat basic block 9



Guards' wall walk 34



A2 demiplane basic block 10



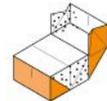
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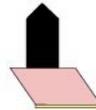
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B half size block 15



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B2 demiplane half size block 17



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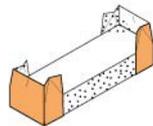
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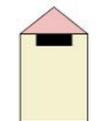
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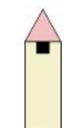
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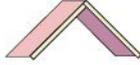
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Roof

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Large floor slab

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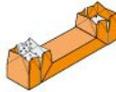
Rose window

93



C1 Large main beam or Lintel

99



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D1 curved block

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D2 curved half size block

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curved block for machicolations

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curved half size block for machicolations

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curved parapet

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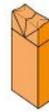
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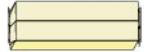
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wide beam

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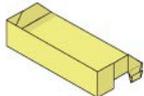
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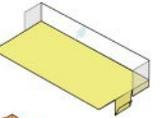
Balcony with flowerpot

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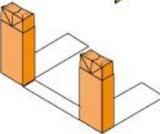
Glass balcony

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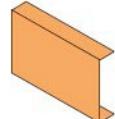
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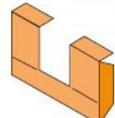
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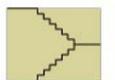
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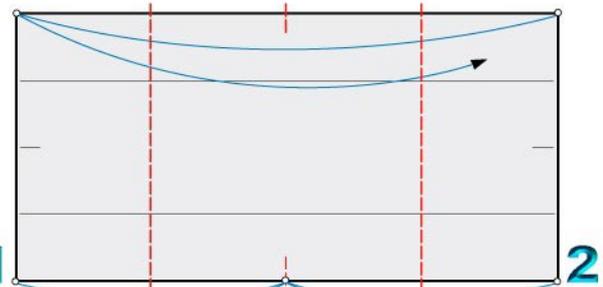


A - BASIC BLOCK

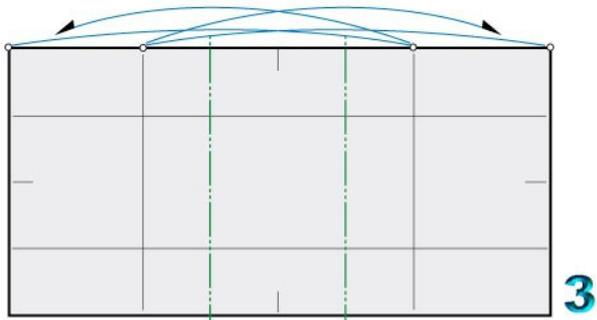
This is the main building block for all constructions and easy to do. Cut in half the square sheet of paper used for all constructions. The effect is improved using heavy paper or light cardboard of a single colour. The building will appear more realistic using slightly different tones of colour.



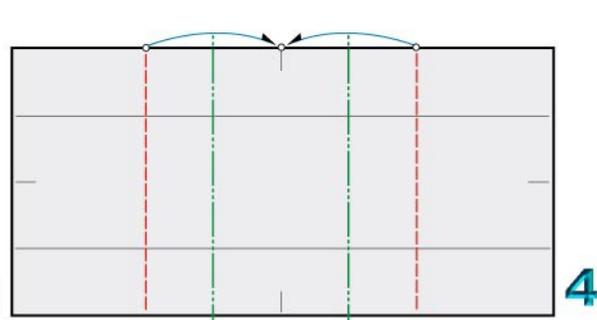
Eseguite prima le 2 piccole pieghe a valle centrali e poi le altre 2 longitudinali



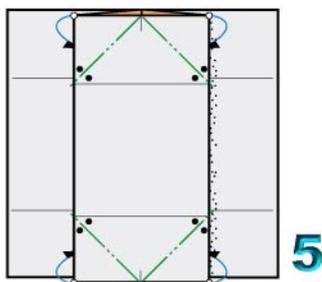
Eseguite prima le 2 piccole pieghe a valle centrali e poi le altre 2 trasversali



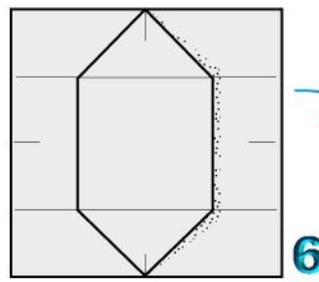
2 pieghe verticali a monte



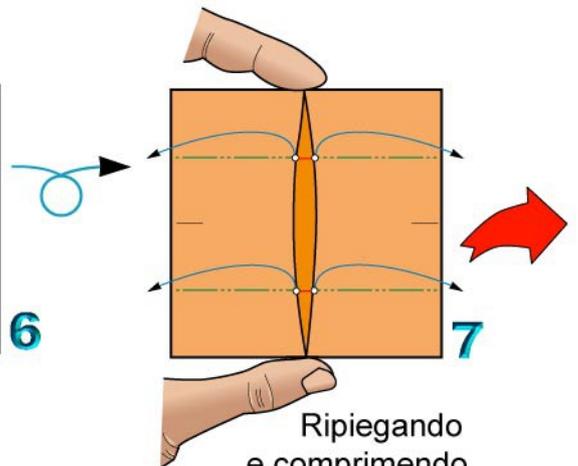
Ruotate ripiegando a valle ed a monte



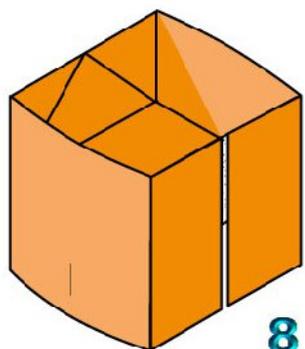
4 pieghe bisettrici a monte e ruotate all'interno



Ribaltate

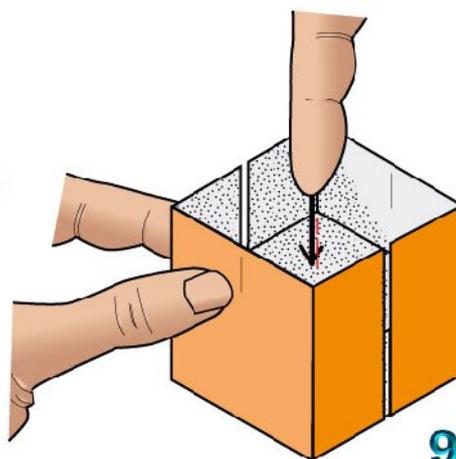


Ripiegando e comprimendo contemporaneamente, aprite modellando 3D



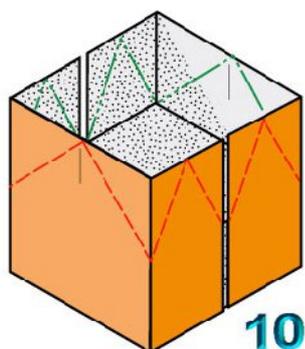
Ribaltate

8



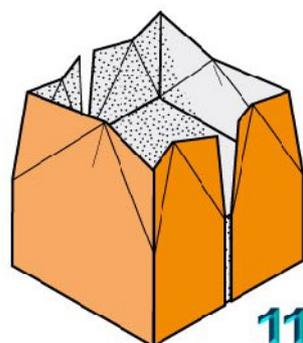
Comprimete gli spigoli e fate rientrare leggermente il fondo

9



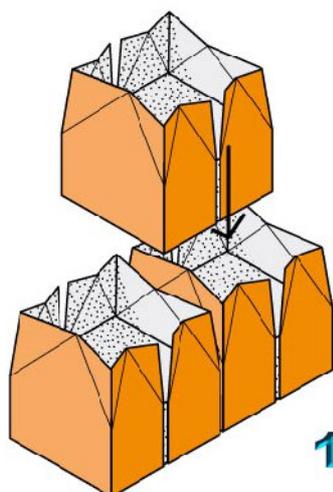
Con una serie di pieghe a valle restringete il perimetro del bordo superiore

10

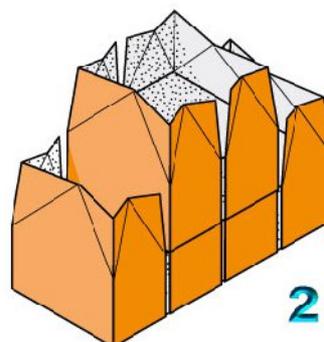


Blocco base A ultimato

11



1

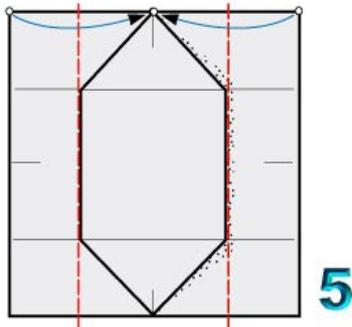


2

ESEMPIO DI UNIONE DI 3 BLOCCHI "A"

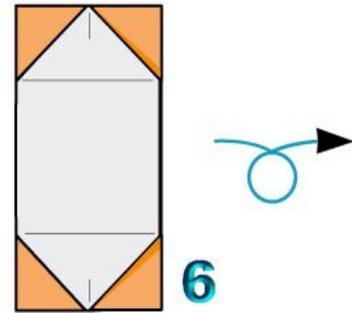
A1 - FLAT BASIC BLOCK

This module is used at the end of a wall or windowsill. In this case, you can use a two-colour paper sheet to simulate the colour of marble.



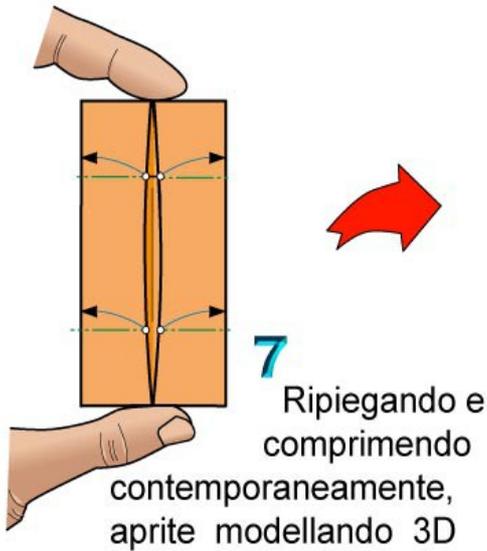
5

Partite dalla fig. n. 4 del blocco A.
2 pieghe a valle e ruotate intascando



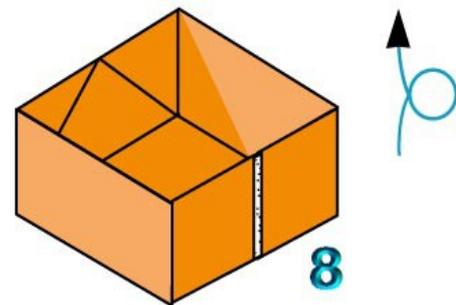
6

Ribaltate



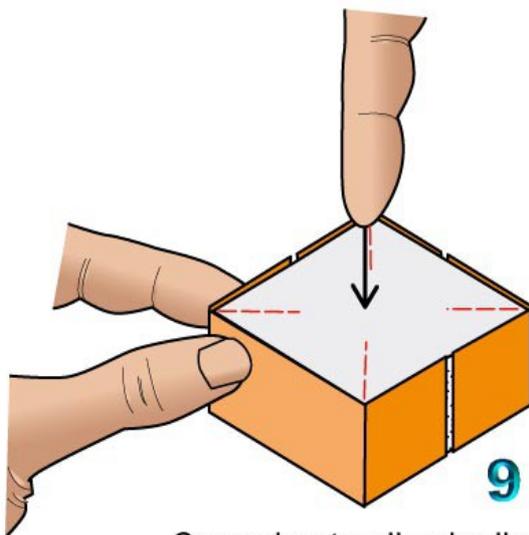
7

Ripiegando e comprimendo contemporaneamente, aprite modellando 3D



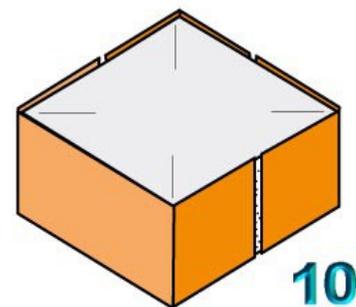
8

Ribaltate



9

Comprimete gli spigoli e fate rientrare leggermente il fondo

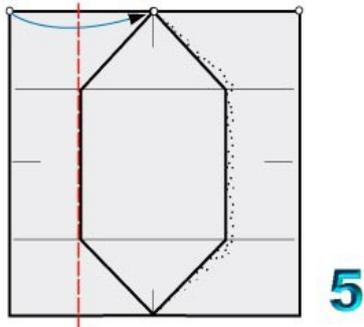


10

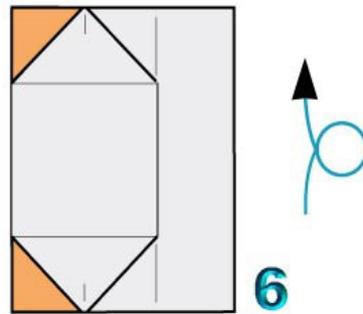
Blocco base A1 ultimato

A2 - DEMIPLANE BASIC BLOCK

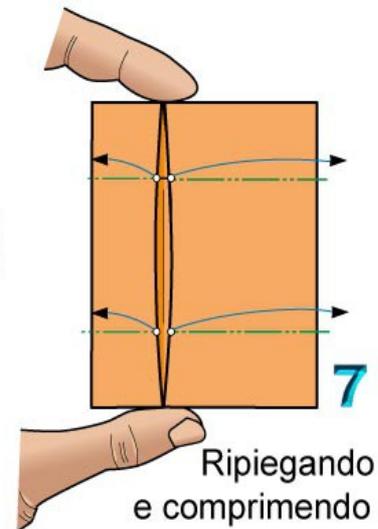
Simple block for various uses



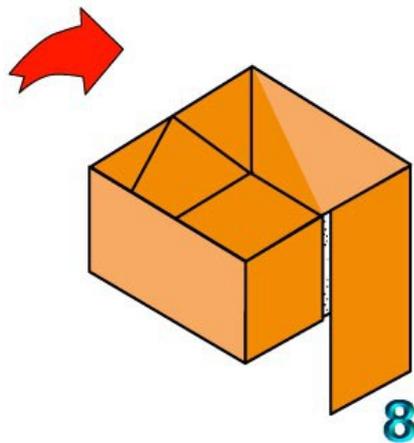
Partite dalla fig. n. 4 del blocco A.
1 piega a valle e ruotate intascando



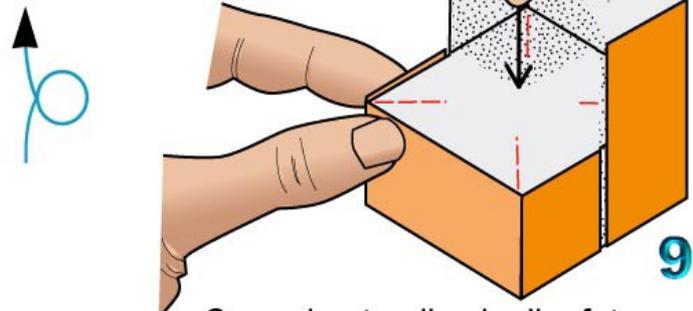
Ribaltate



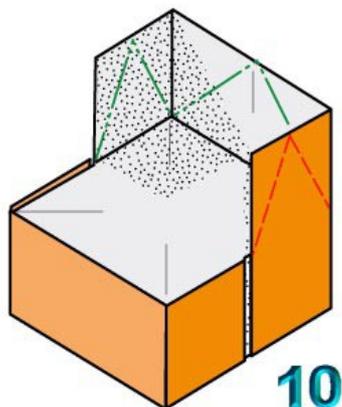
Ripiegando
e comprimendo
contemporaneamente,
aprite modellando 3D



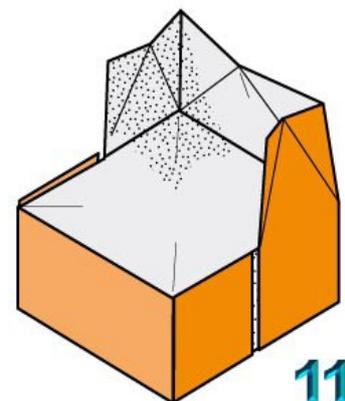
Ribaltate



Comprimete gli spigoli e fate
rientrare leggermente il fondo



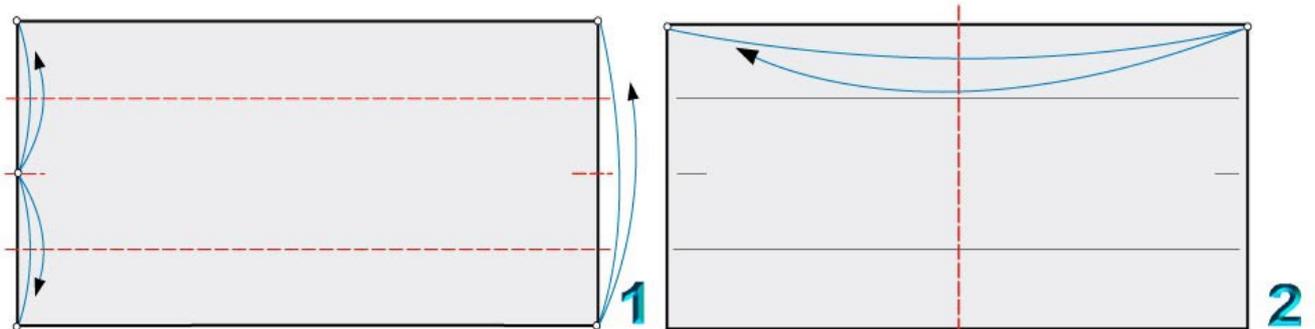
Con una serie di pieghe a valle restringete
il perimetro del bordo superiore



Blocco A2 ultimato

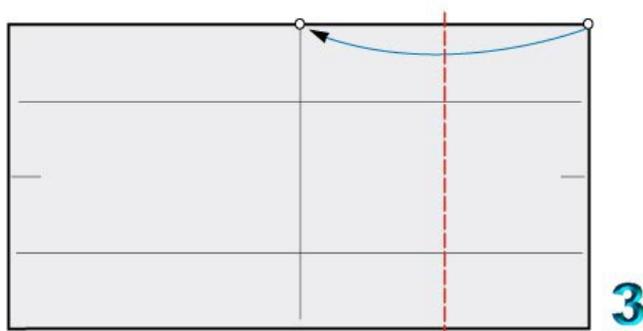
A3 - BASIC BLOCK FOR EDGES OR CORNERS

It will be used to realise the corners of the walls at 90°. It is made out of two identical modules assembled from the same rectangular sheet of paper.

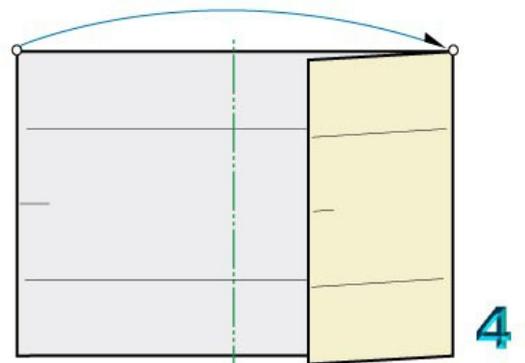


Eseguite prima le 2 piccole pieghe a valle centrali e poi le altre 2 longitudinali

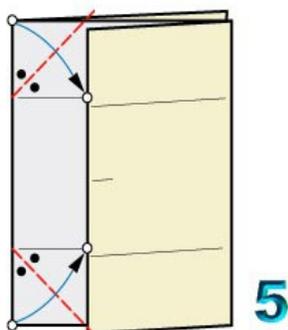
1 piega a valle



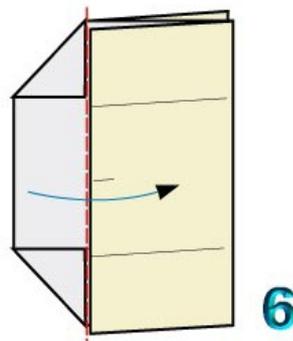
1 piega a valle e ruotate



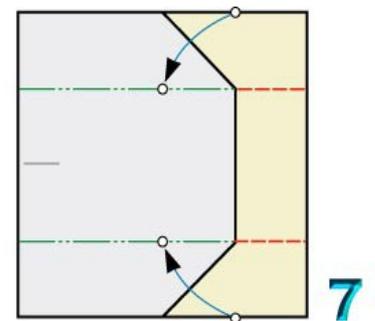
1 piega a monte e ruotate



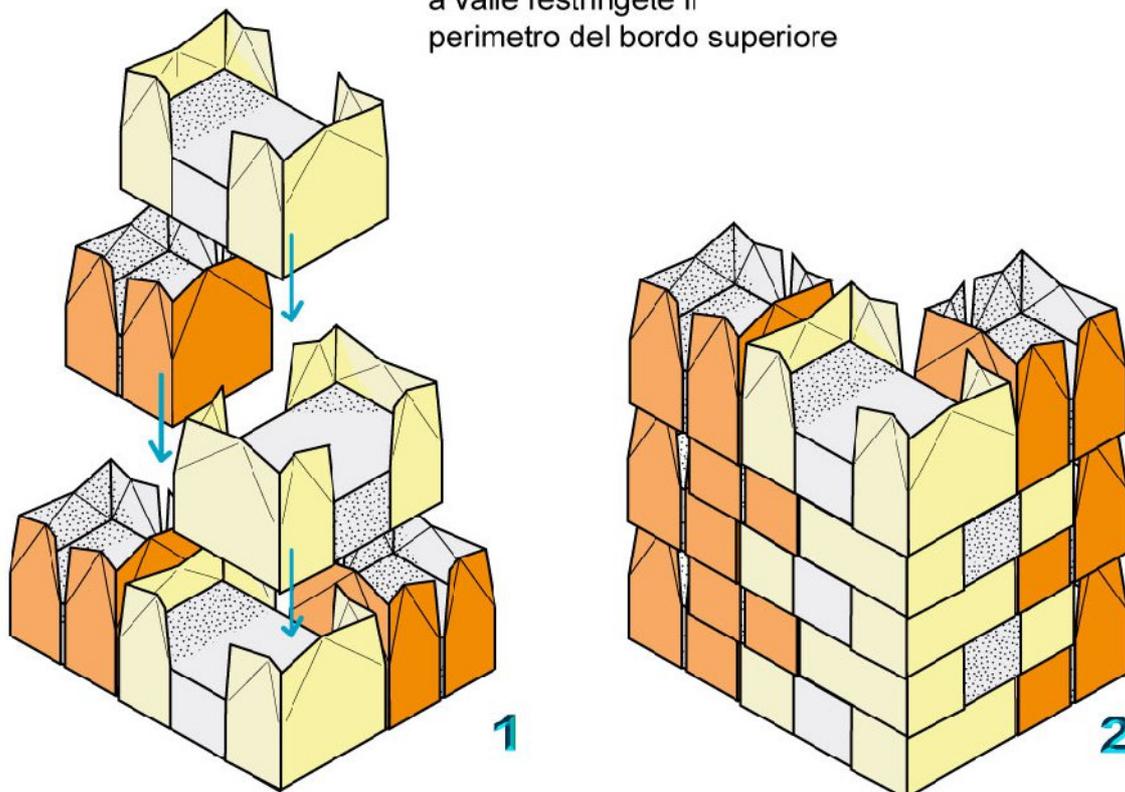
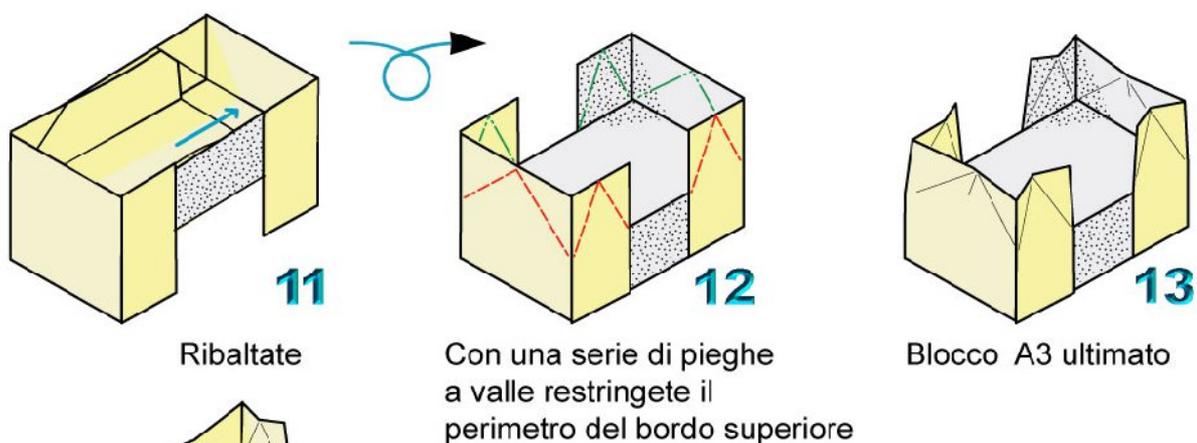
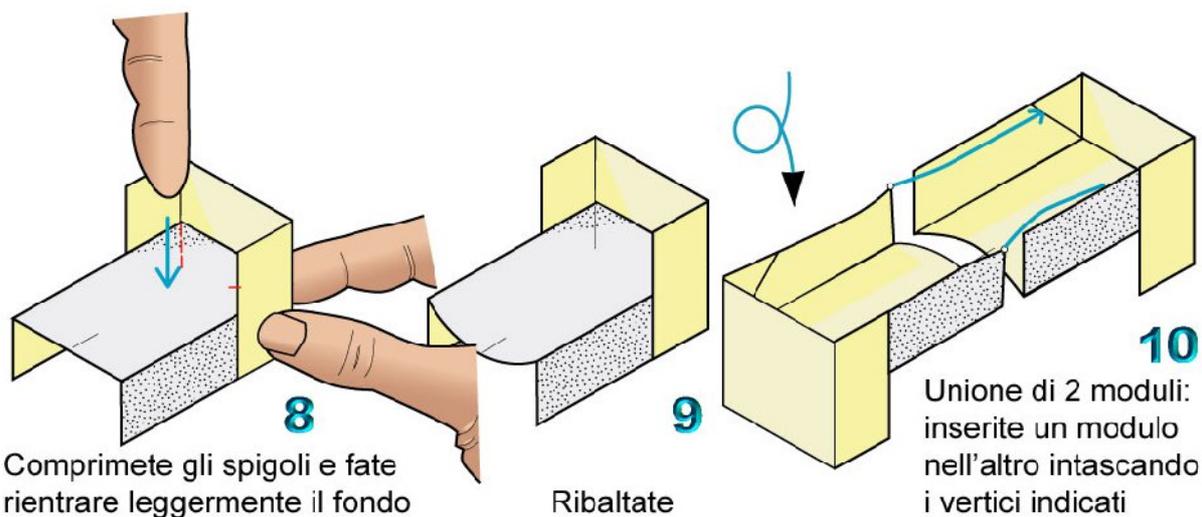
2 pieghe bisettrici a valle e ruotate



1 piega a valle solo sulla sup. in vista e ruotate



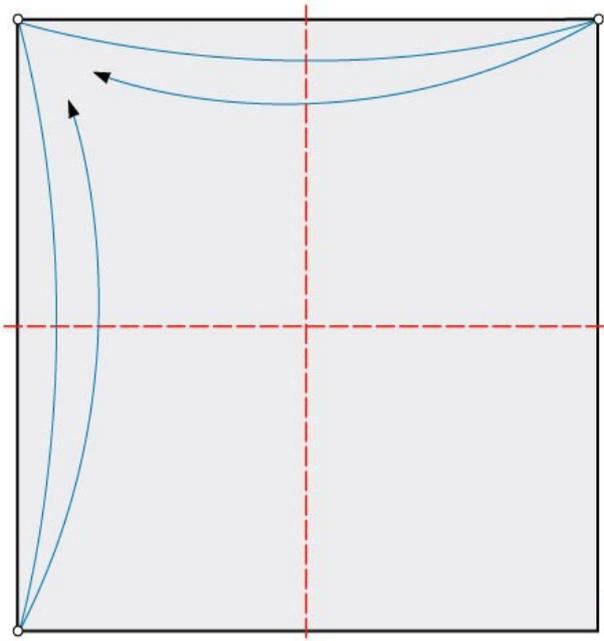
ripiegando a valle ed a monte ruotate modellando 3D



ESEMPIO DI UNIONE FRA BLOCCHI "A" ED "A3" PER FORMARE UN MURO AD ANGOLO

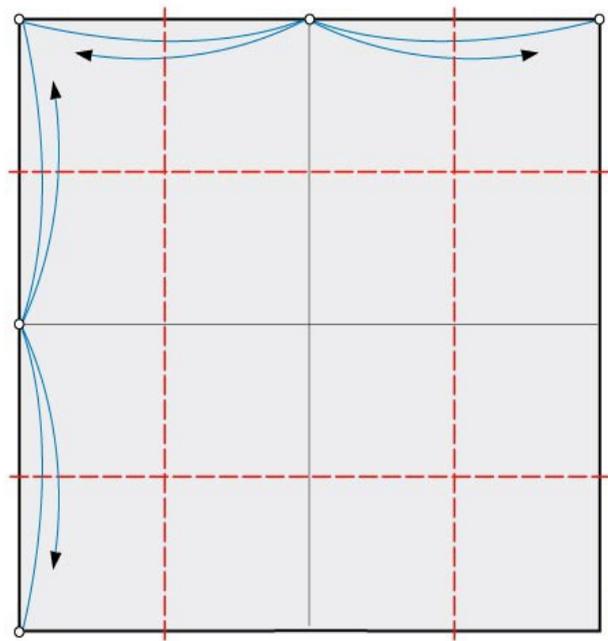
A4 SPECIAL BLOCK

This is a very elaborate module that can have many uses, for example, it can form the basis of the battlements in the corners.



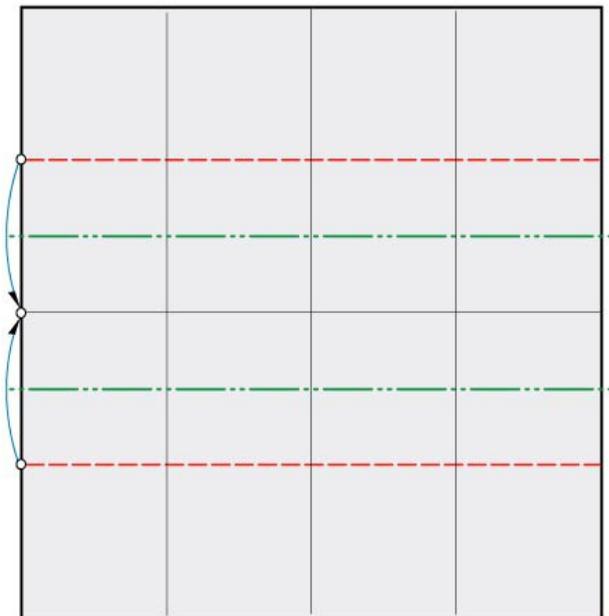
1

2 pieghe a valle



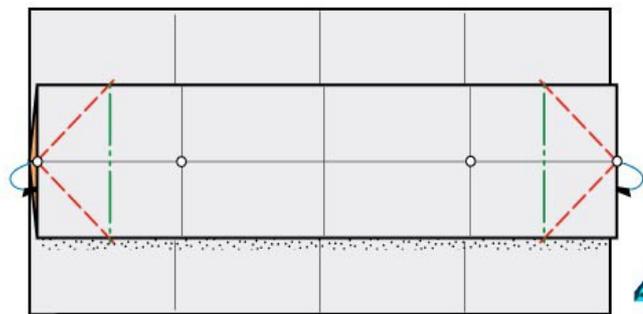
2

4 pieghe a valle



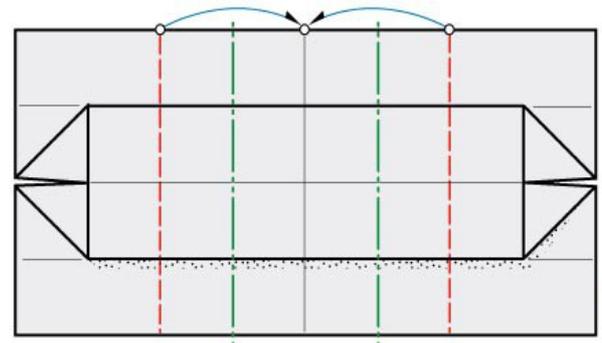
3

2 pieghe a monte e ruotate ripiegando a valle



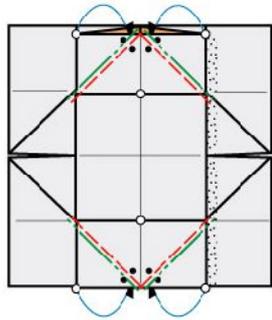
4

2 pieghe rovesce interne



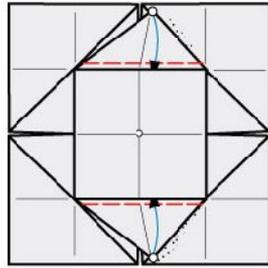
5

2 pieghe a monte e ruotate ripiegando a valle



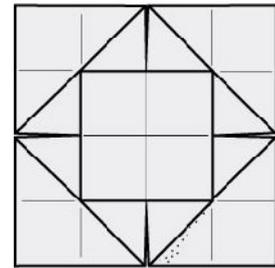
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4 pieghe rovesce interne



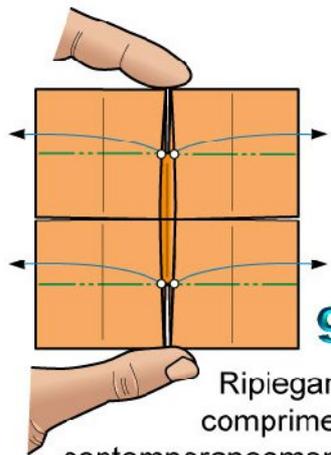
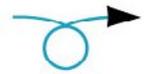
7

2 pieghe a valle ed intascate



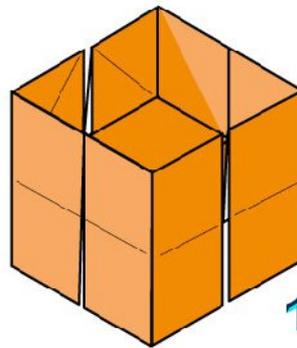
8

Ribaltate



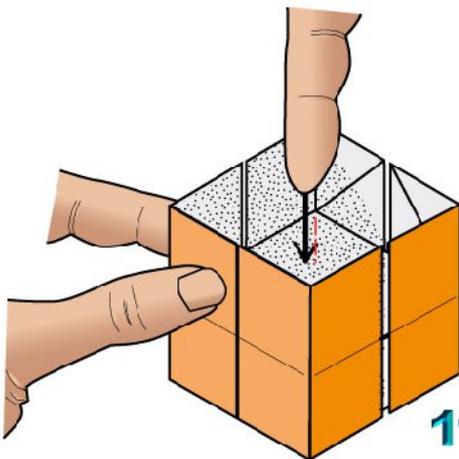
9

Ripiegando e comprimendo contemporaneamente, aprite modellando 3D



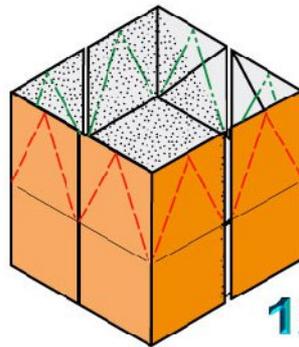
10

Ribaltate



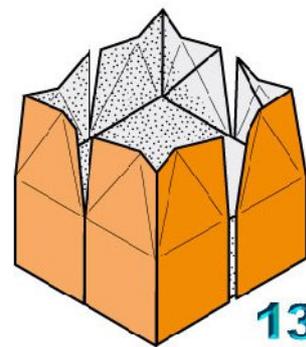
11

Comprimendo gli spigoli fate rientrare leggermente il fondo



12

Con una serie di pieghe a valle restringete il perimetro del bordo superiore



13

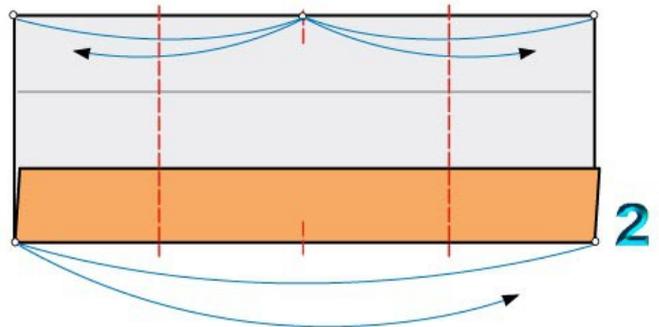
Blocco A4 ultimato

B - HALF SIZE BLOCK

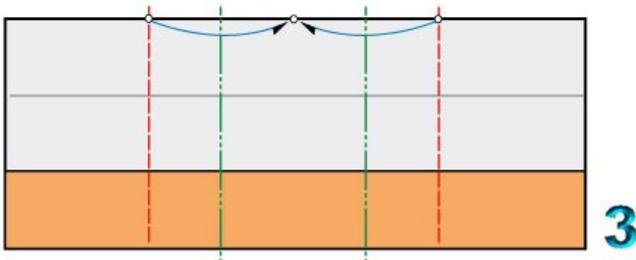
This component is mainly used to build containment walls or partitions of lesser thickness, such as parapets. After reducing the dimensions of the initial rectangle, the construction is the same as for block A.



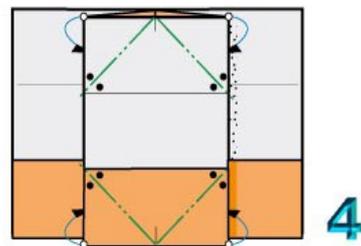
3 pieghe a valle e ruotate il bordo inferiore



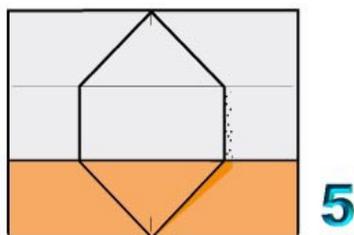
Eseguite prima le 2 piccole pieghe a valle centrali e poi le altre 2 trasversali



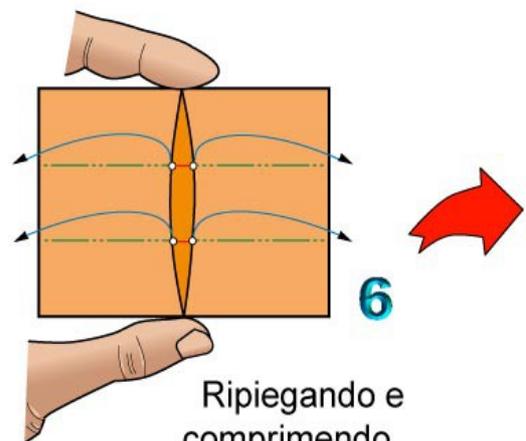
2 pieghe a monte e ruotate ripiegando a valle



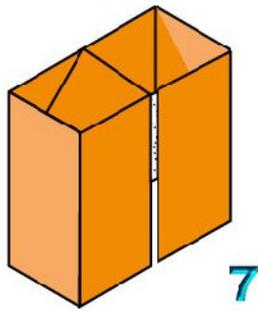
4 pieghe a monte e ruotate all'interno



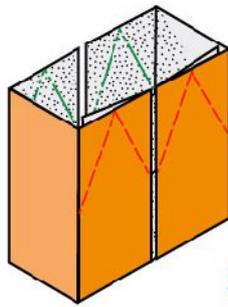
Ribaltate



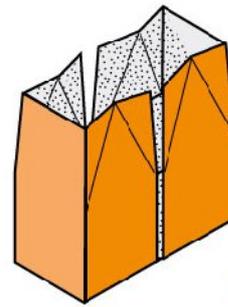
Ripiegando e comprimendo contemporaneamente, aprite modellando 3D



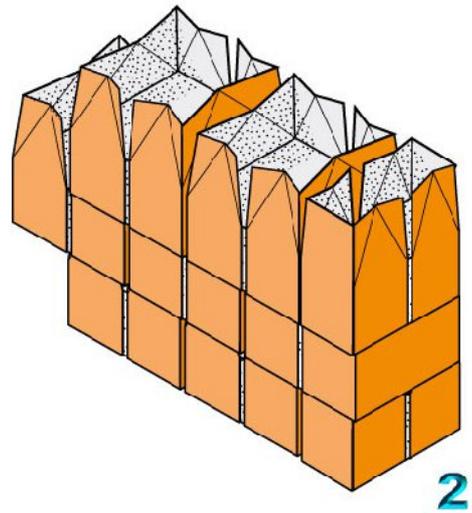
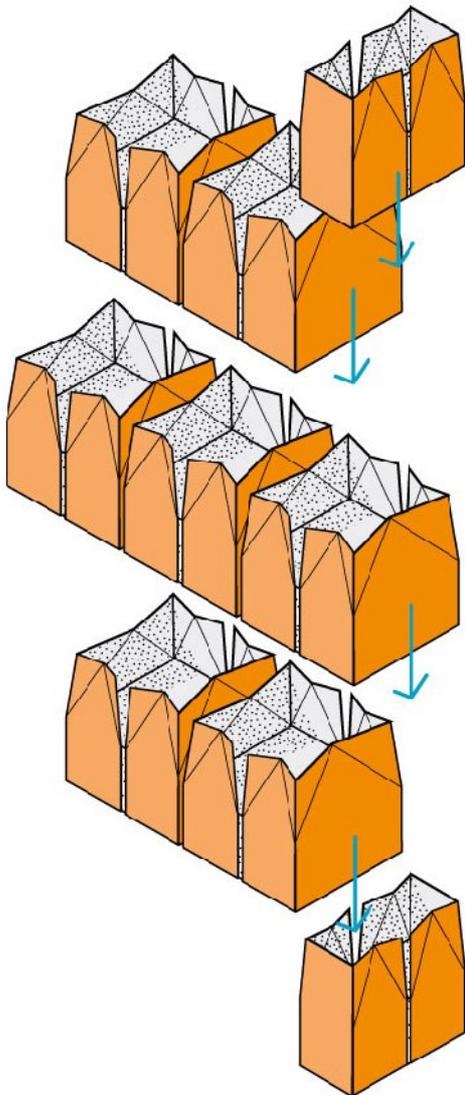
Ribaltate



Con una serie di pieghe a valle restringete il perimetro del bordo superiore



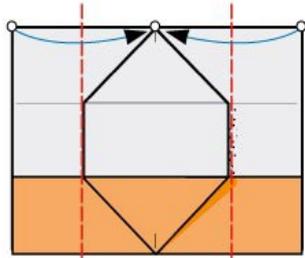
Mezzo blocco B ultimato



ESEMPIO DI MURO DI TESTA FORMATO DA BLOCCHI BASE "A" E MEZZI BLOCCHI "B"

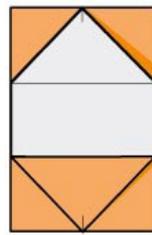
B1 - FLAT HALF-SIZE BLOCK

This module is used to put the finishing touches on a wall.



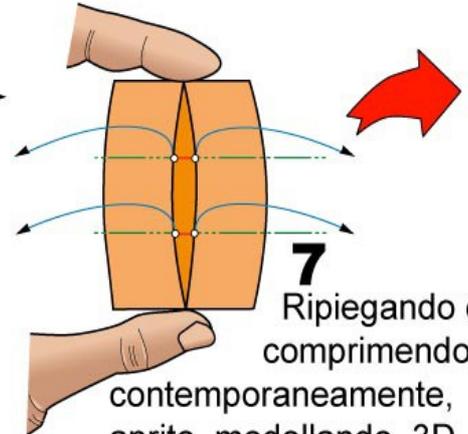
5

Partite dalla fig. n. 4 del semiblocco B.
2 pieghe a valle e ruotate intascando



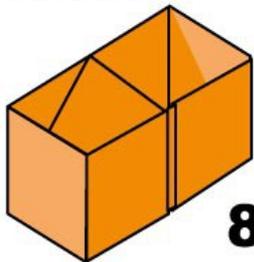
6

Ribaltate



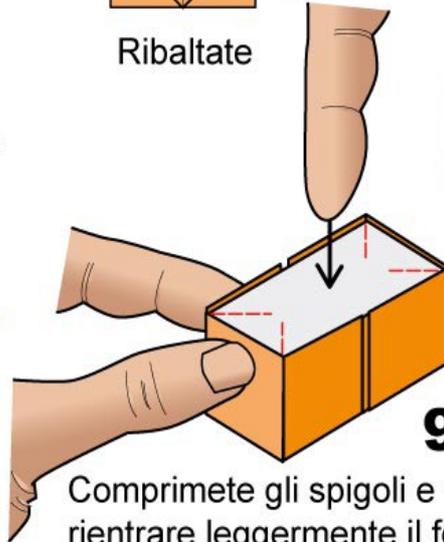
7

Ripiegando e comprimendo contemporaneamente, aprite modellando 3D



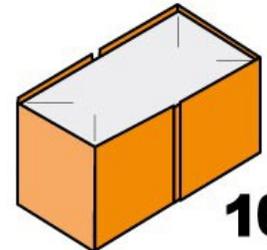
8

Ribaltate



9

Comprimete gli spigoli e fate rientrare leggermente il fondo

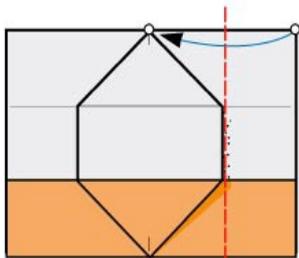


10

Semiblocco B1 ultimato

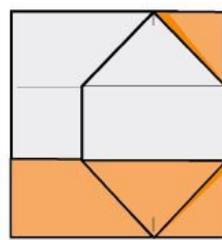
B2 half-size block demiplane

This component can have different uses; for example in the construction of the bell tower.



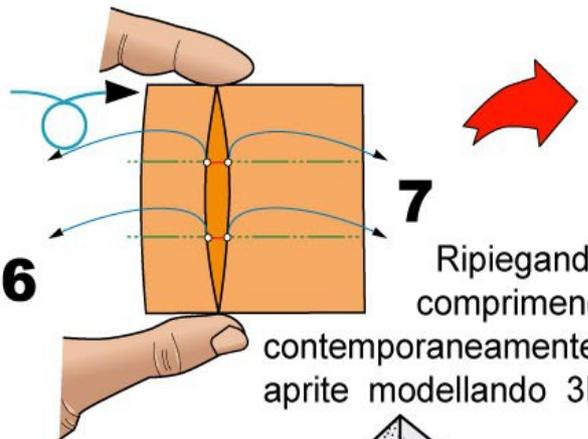
5

Partite dalla fig. n. 4 del semiblocco B.
1 piega a valle e ruotate intascando



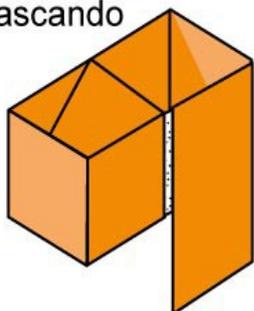
6

Ribaltate



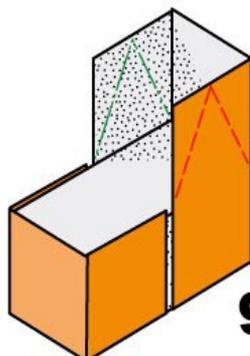
7

Ripiegando e comprimendo contemporaneamente, aprite modellando 3D



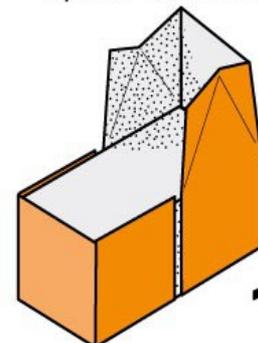
8

Ribaltate



9

Con una serie di pieghe a valle restringete il bordo superiore

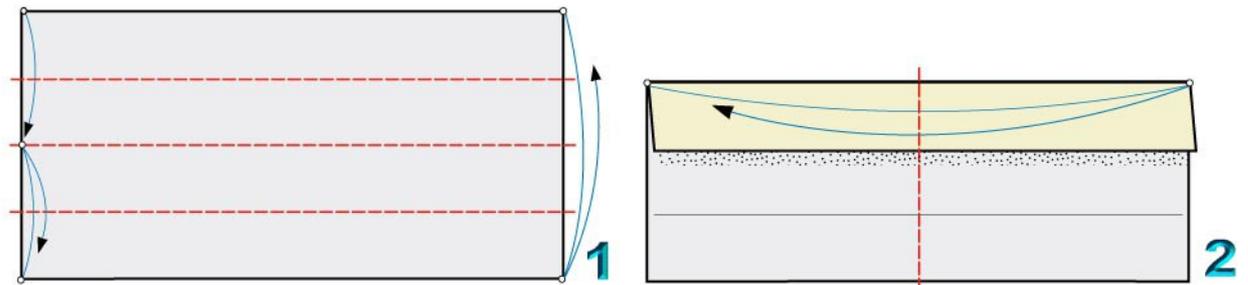


10

Semiblocco B2 ultimato

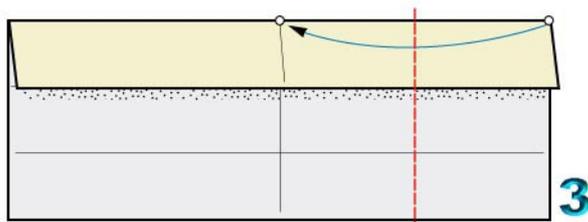
B3 - HALF SIZE BLOCK FOR EDGES OR CORNERS

this module is used to execute walls with 90° angles. It is obtained by combining 2 identical modules. After reducing the width of the initial rectangle, the carrying out is the same as that of block A3.

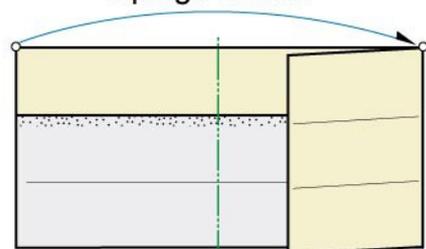


3 pieghe a valle e ruotate il bordo superiore

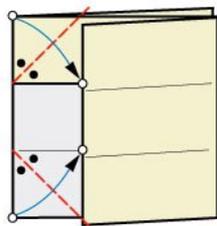
1 piega a valle



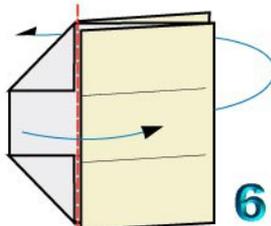
1 piega a valle e ruotate



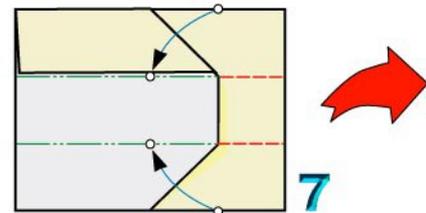
1 piega a monte e ruotate



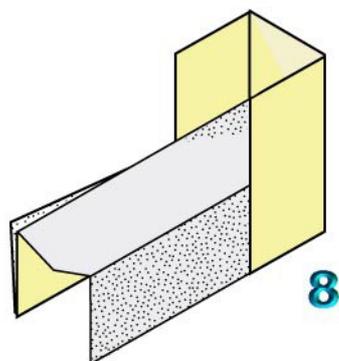
2 pieghe bisettrici a valle e ruotate



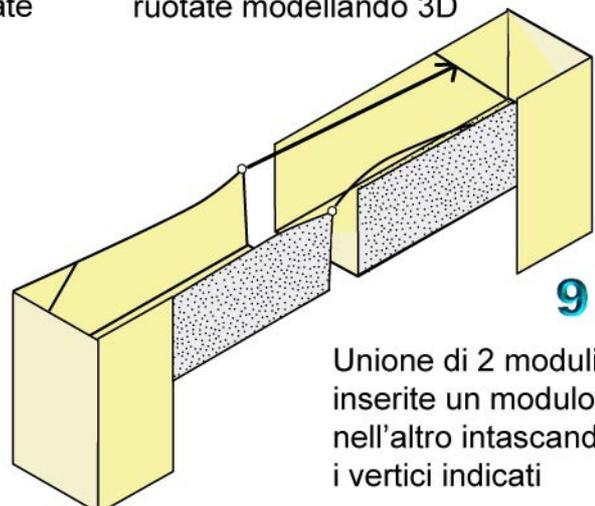
1 piega a valle solo sulla sup. in vista e ruotate



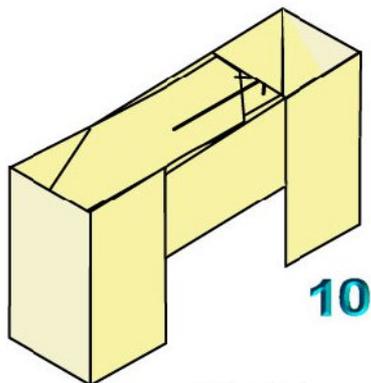
ripiegando a valle ed a monte ruotate modellando 3D



modulo ultimato; ribaltate

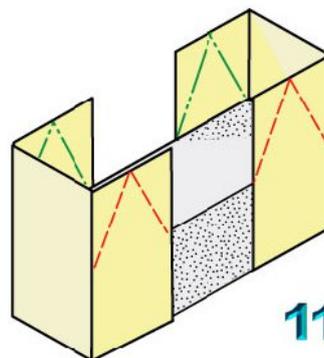


Unione di 2 moduli:
inserite un modulo
nell'altro intascando
i vertici indicati



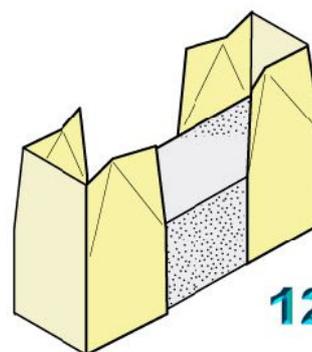
10

Ribaltate



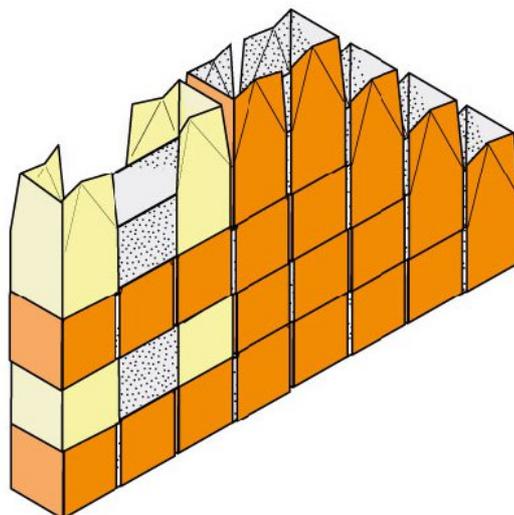
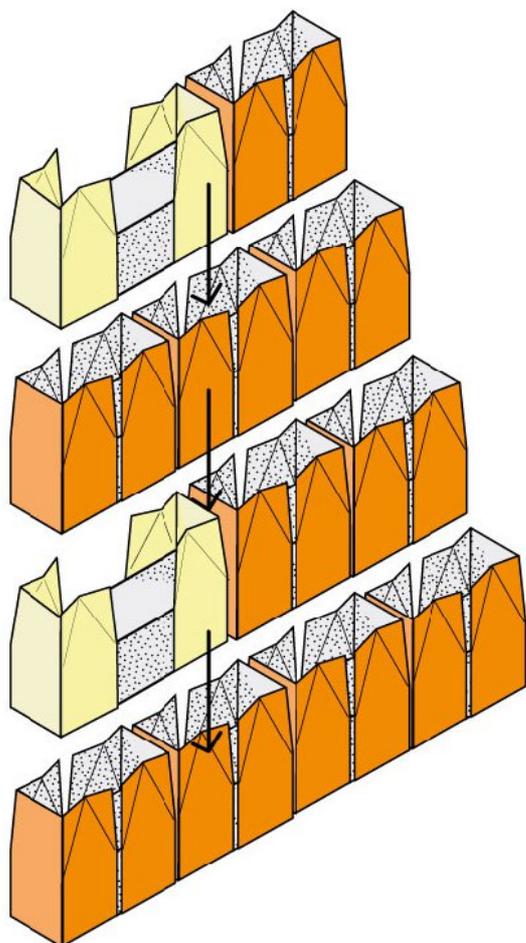
11

Con una serie di pieghe a valle restringete il perimetro dei bordi superiori



12

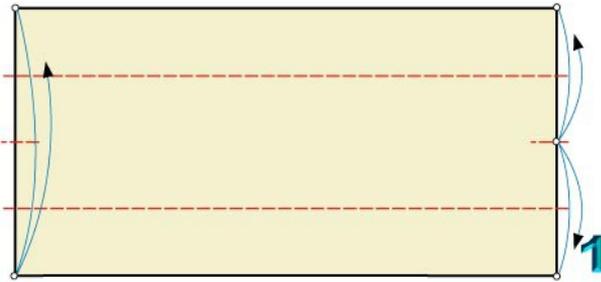
Mezzo blocco B3 ultimato



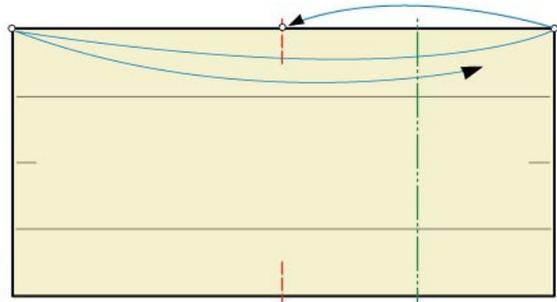
ESEMPIO DI MURO DI TESTA FORMATO DA MEZZI BLOCCHI "B" E "B3"

MAIN BEAM or LINTEL

This architectural element is a structural horizontal block that spans the space or opening between two vertical supports such as two columns.



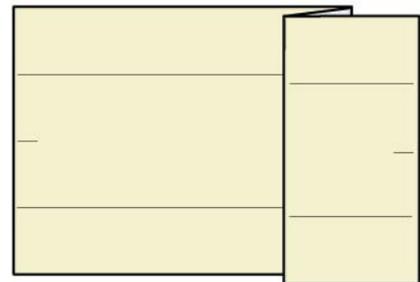
Eseguite prima le 2 piccole pieghe a valle centrali e poi le altre 2 longitudinali



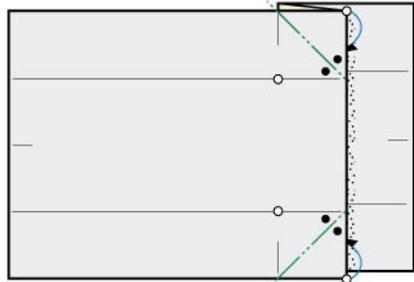
Eseguite prima le 2 piccole pieghe a valle centrali e poi una a monte verticale e ruotate



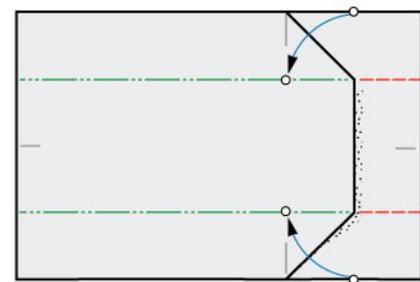
Una piega a valle solo sulla sup. in vista e ruotate



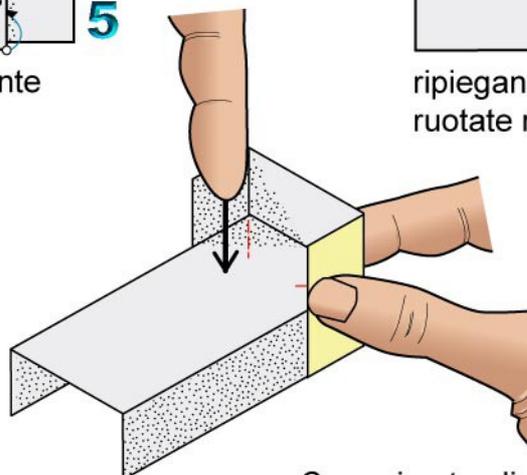
Ribaltate



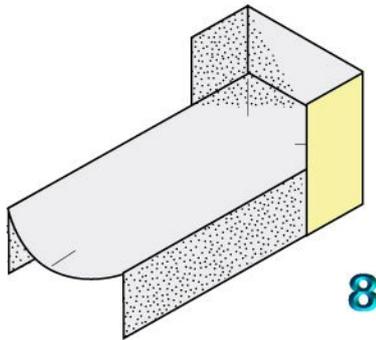
2 pieghe bisettrici a monte e ruotate all' interno



ripiegando a valle ed a monte ruotate modellando 3D

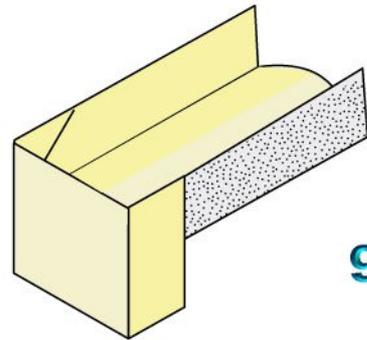


Comprimete gli spigoli e fate rientrare leggermente il fondo

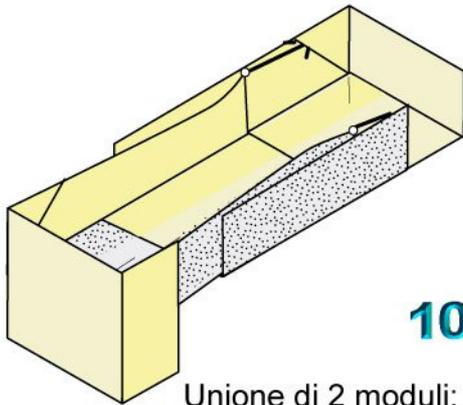


8

Modulo ultimato;
ribaltate

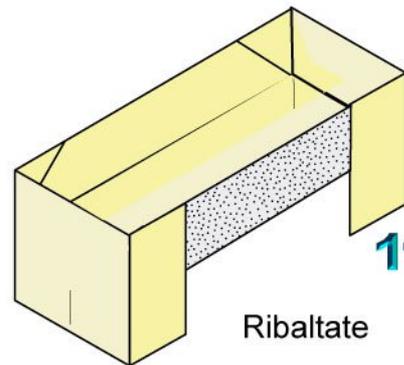


9



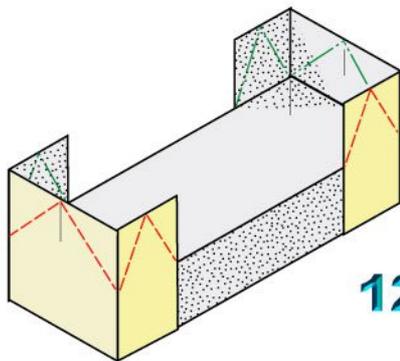
10

Unione di 2 moduli:
inserite un modulo
nell'altro intascando
i vertici indicati



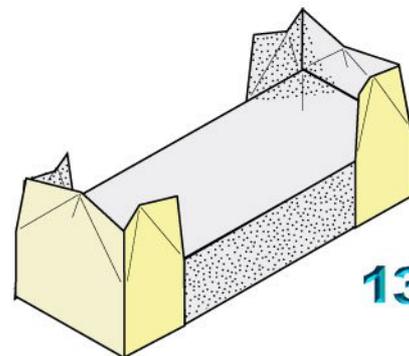
11

Ribaltate



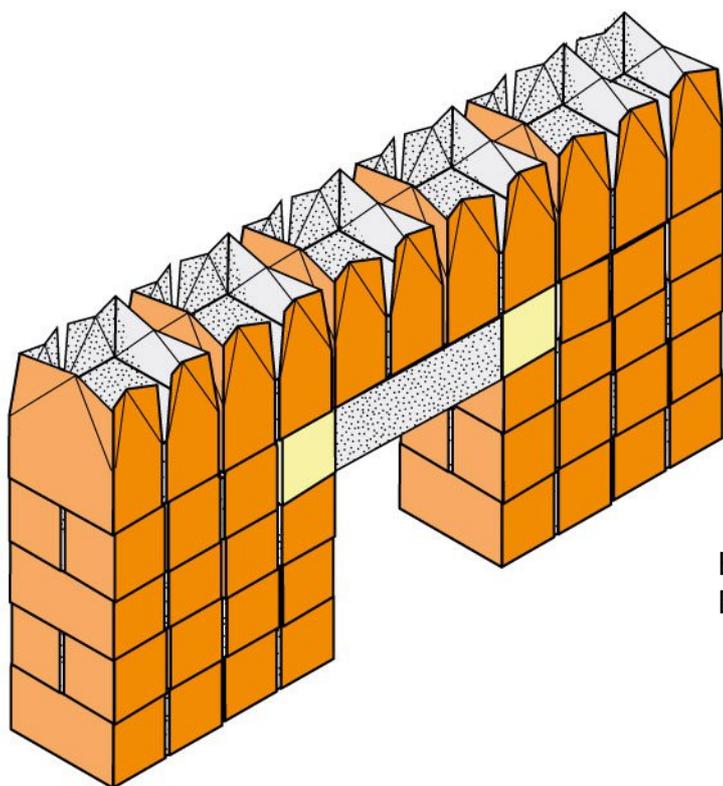
12

Con una serie di
pieghe a valle
restringete i
bordi superiori

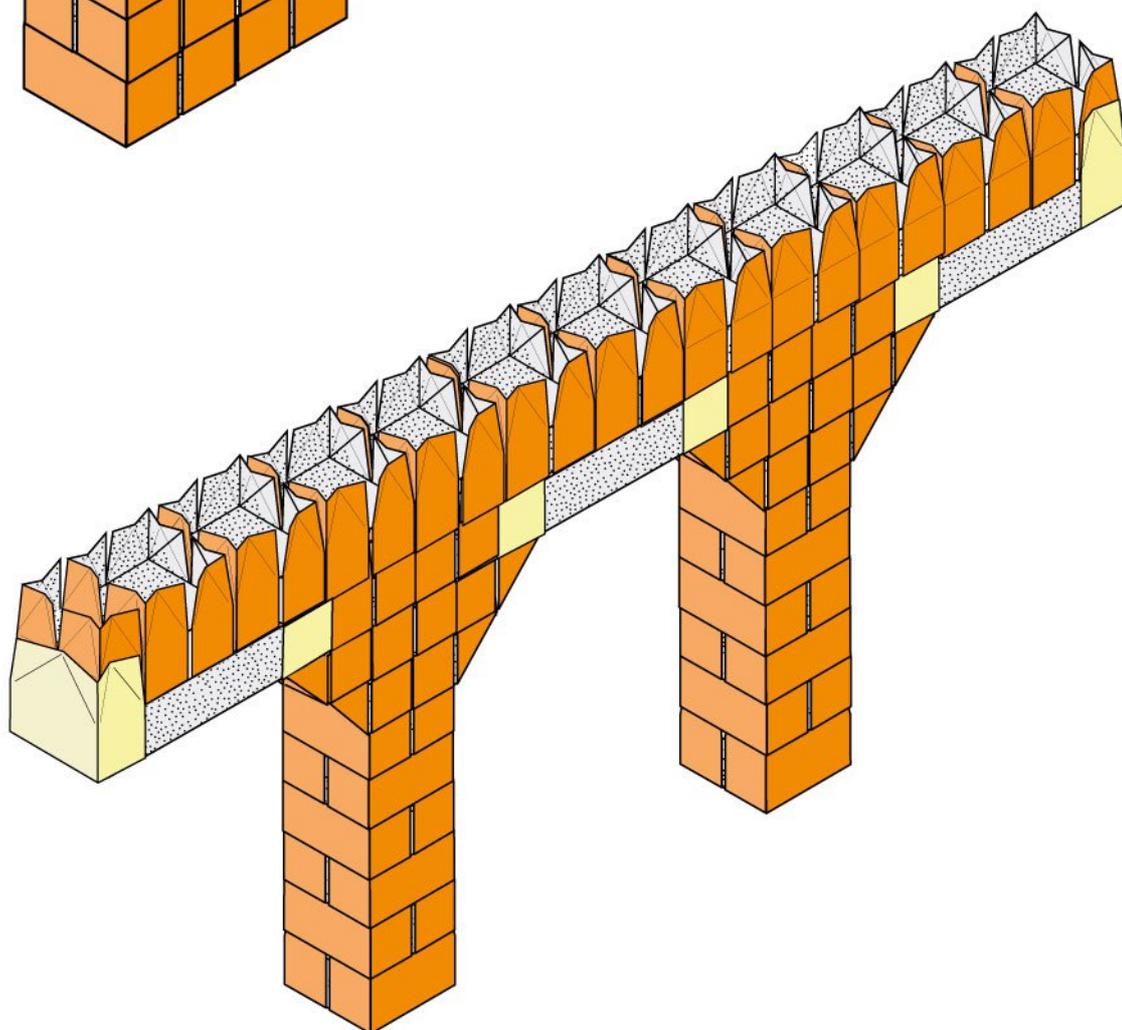


13

Architrave ultimata



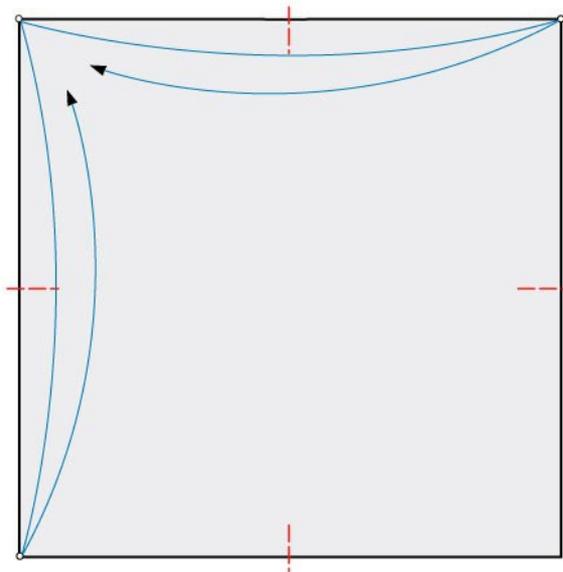
ESEMPIO DI REALIZZAZIONE
DI APERTURA ARCHITRAVATA



ESEMPIO DI REALIZZAZIONE DI COLONNATO A
SOSTEGNO DI CLARISTORIO DI CHIESA ROMANICA

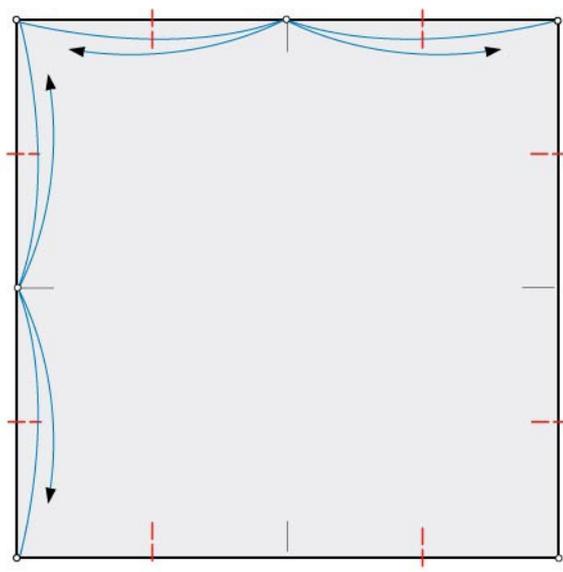
FLOOR SLABS

Horizontal structures that divide a space vertically in a medieval multi-story building, allowing walking and made of wood or sometimes bricks. It is made with a sheet of paper fixed to the surrounding walls.



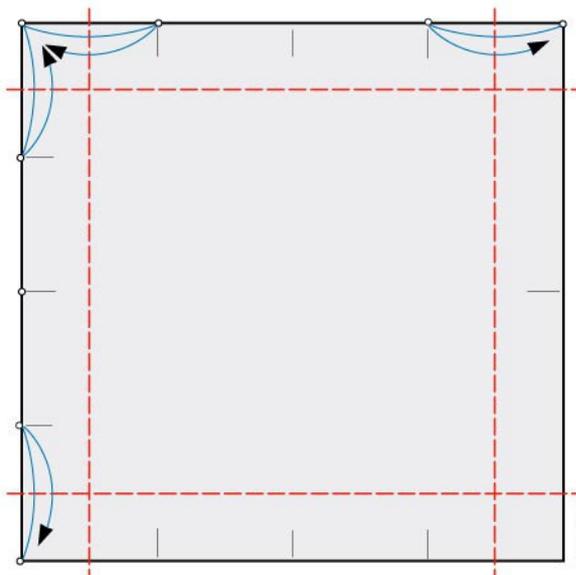
1

4 piccole pieghe a valle



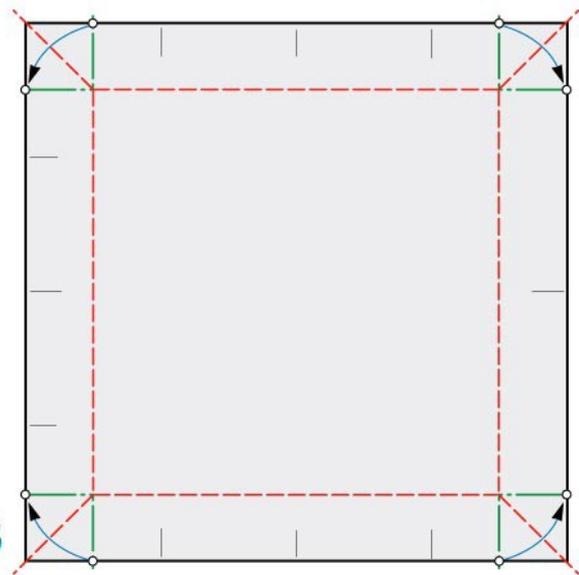
2

8 piccole pieghe a valle



3

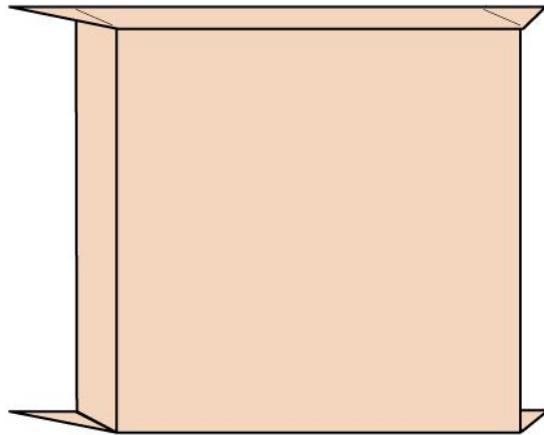
4 pieghe a valle



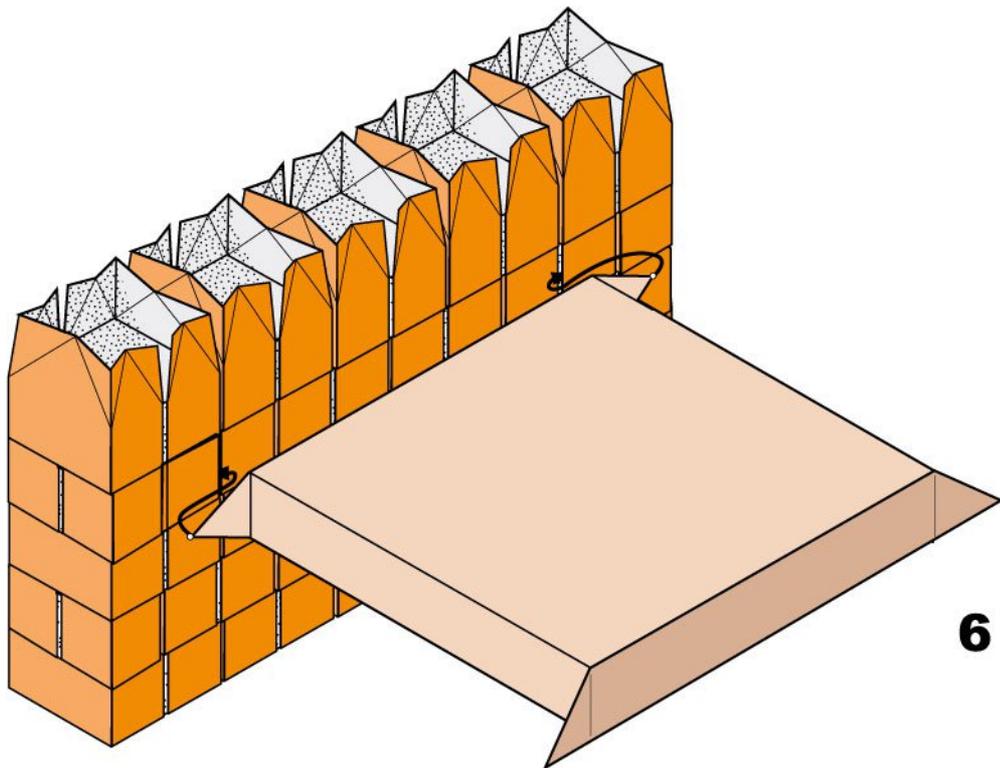
4

4 piccole pieghe a valle, ruotate e ribaltate

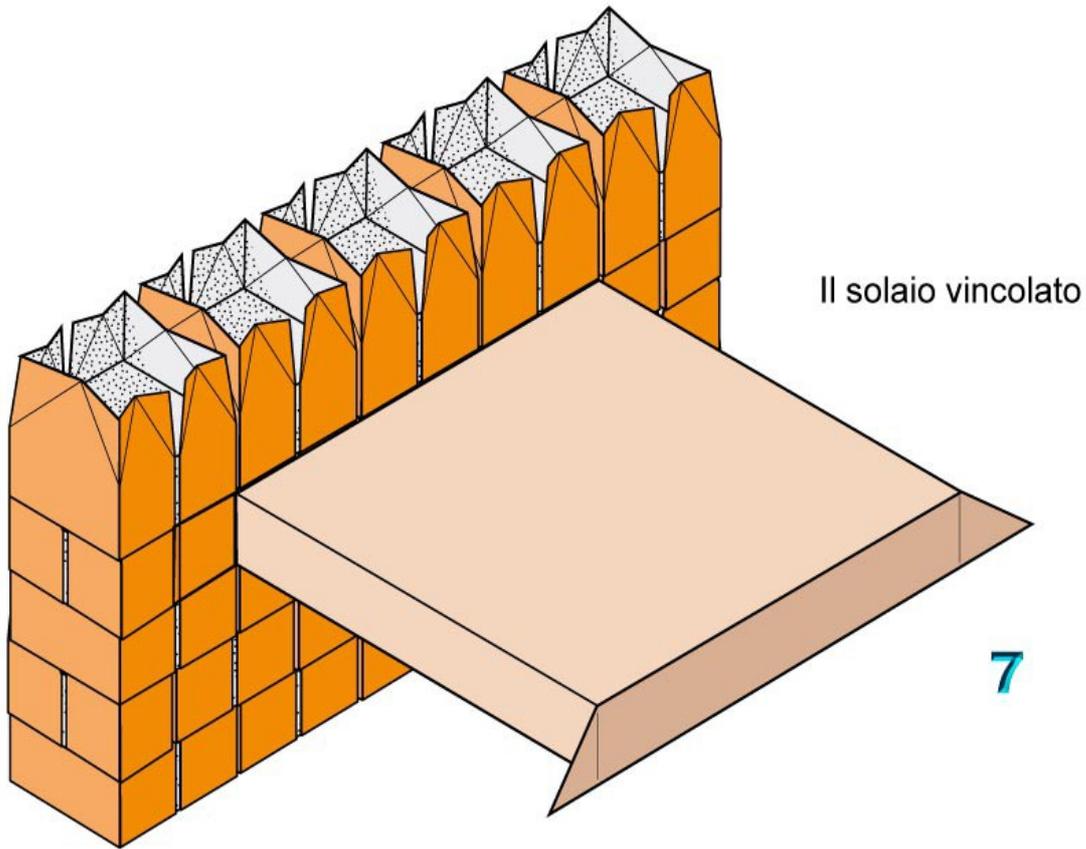




Solaio quadrato ultimato

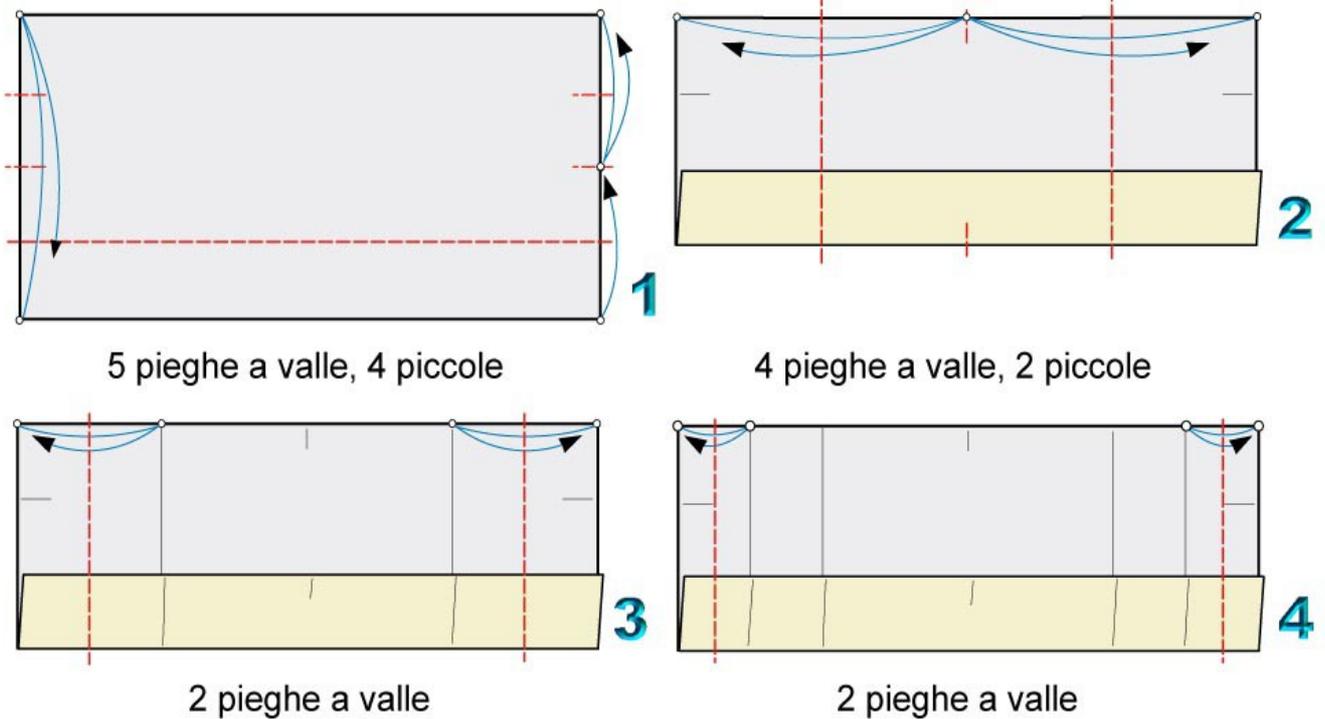


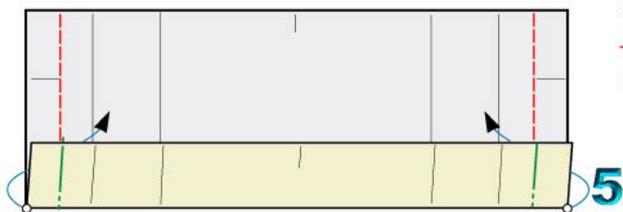
Il solaio si vincola alle pareti inserendone i vertici nelle fessure presenti nel centro dei blocchi base A



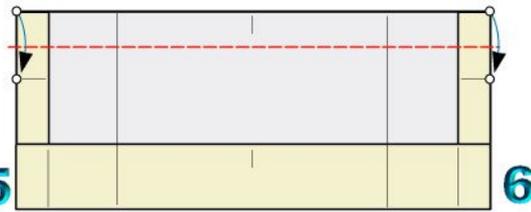
BALCONY

It is made of a single square of paper folded and hung on the wall by means of two "wings" inserted in the cracks between the blocks of the facade.

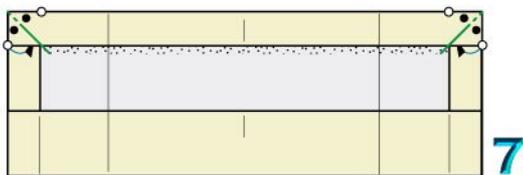




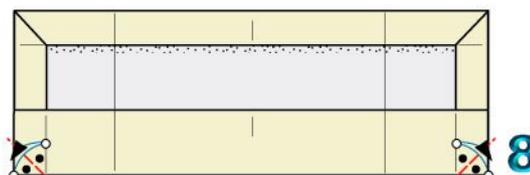
2 pieghe rovesce interne



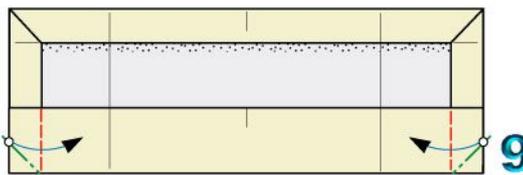
1 piega a valle e ruotate



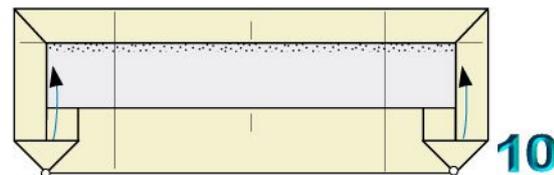
2 pieghe a monte e ruotate



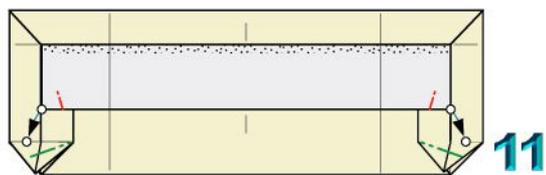
2 pieghe bisettrici a valle



2 pieghe bisettrici a monte e ruotate ripiegando a valle



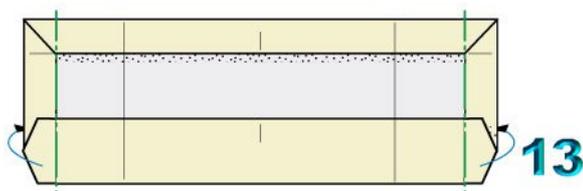
Estraete i 2 vertici interni



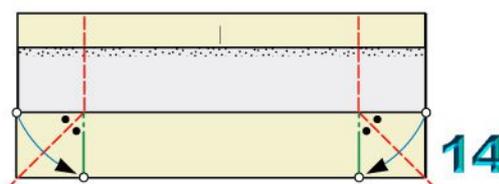
Piegando a monte ed a valle slittate i 2 vertici indicati



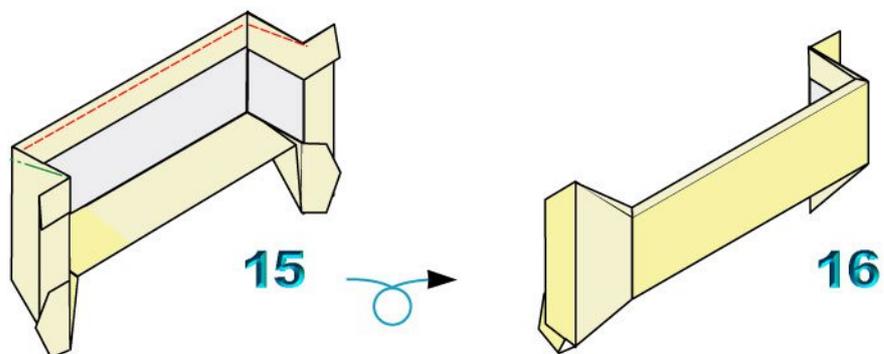
2 pieghe a valle e ruotate



Ripiegando a valle ruotate 2 volte

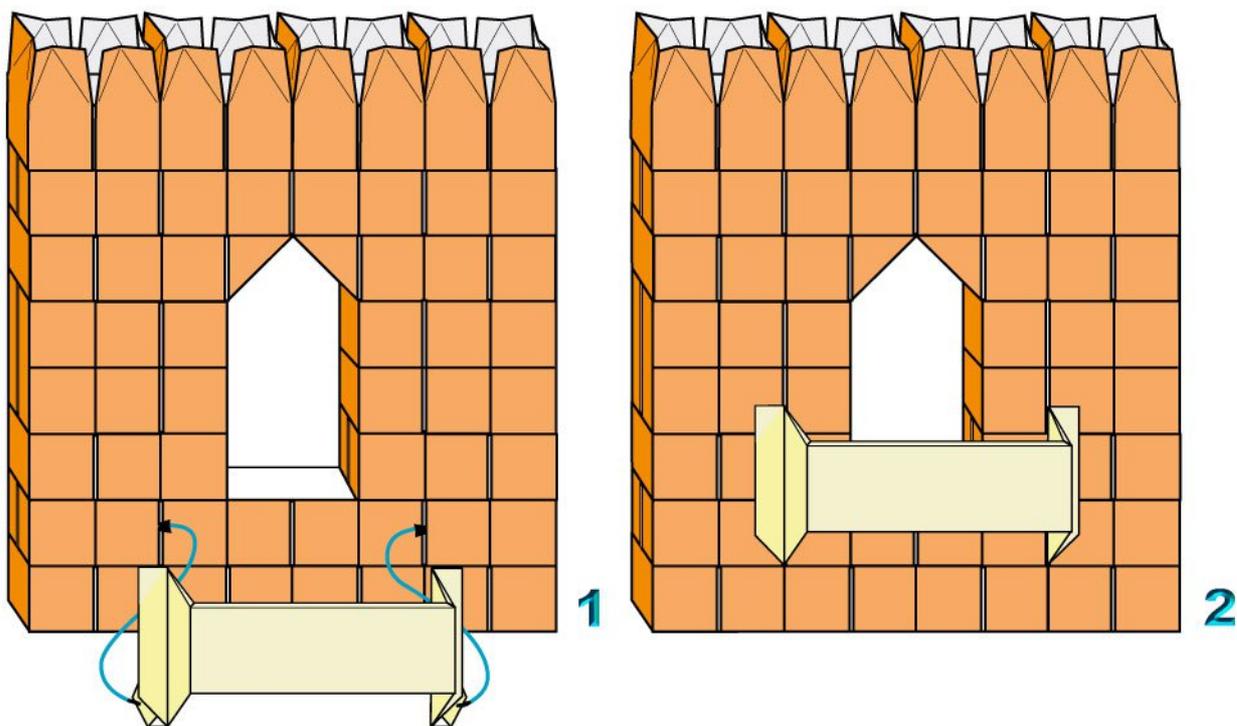


2 pieghe bisettrici a valle e, ripiegando a monte ed a valle, ruotate modellando 3D



Date spessore al parapetto e ribaltate

Balcone ultimato.

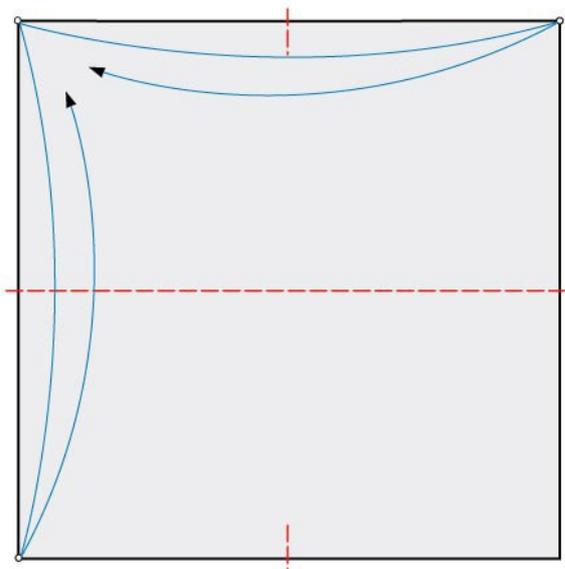


Montaggio del balcone: inserite le appendici laterali all'interno delle fessure centrali dei blocchi A

STAIRS

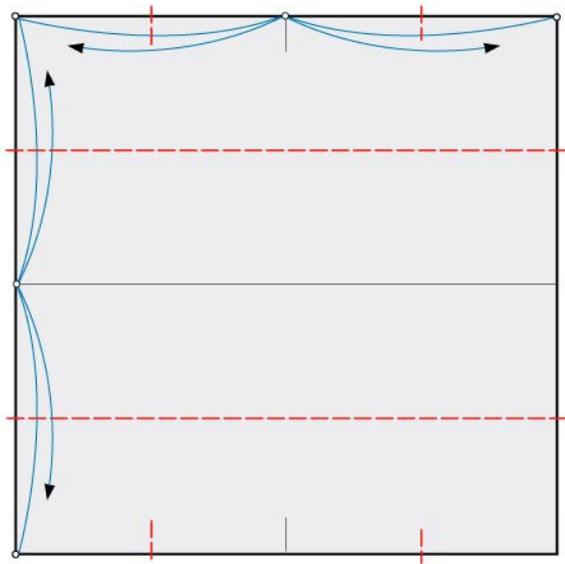
In order to build the two flights of stairs to reach the upper floor, 3 squares are needed of the same dimensions used so far, two for the stairs themselves and one for the landing.

COSTRUZIONE DI UNA RAMPA SEMPLIFICATA



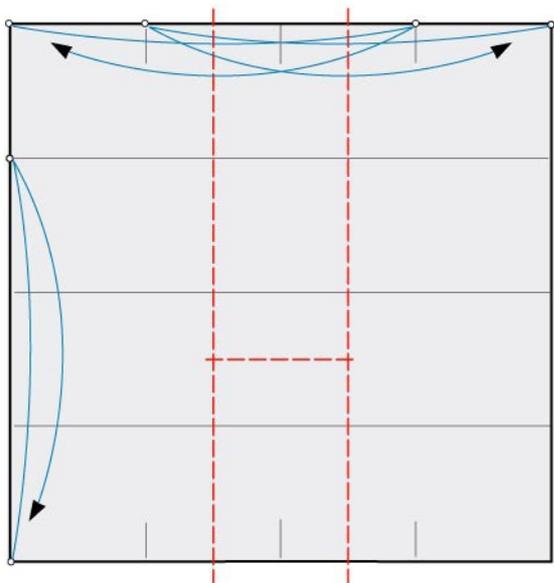
1

1 piega a valle e 2 più piccole



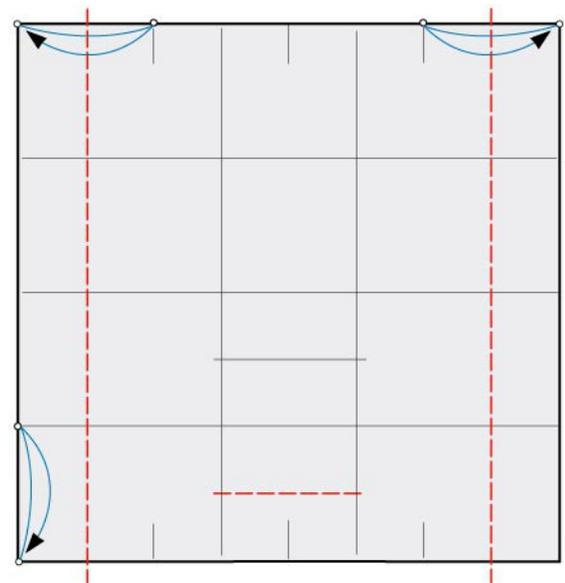
2

2 pieghe a valle e 4 più piccole



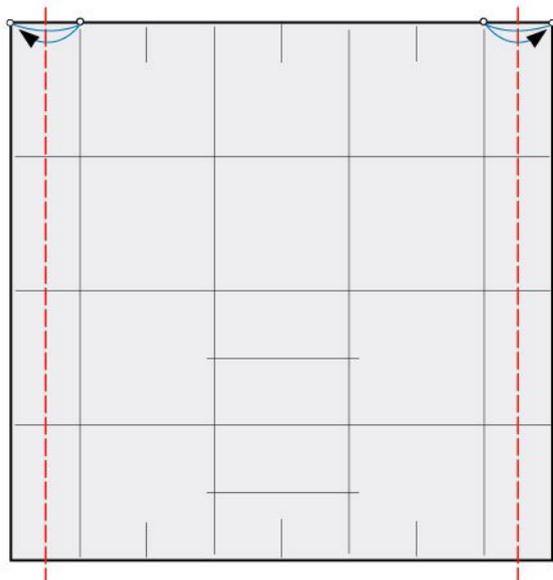
3

3 pieghe a valle



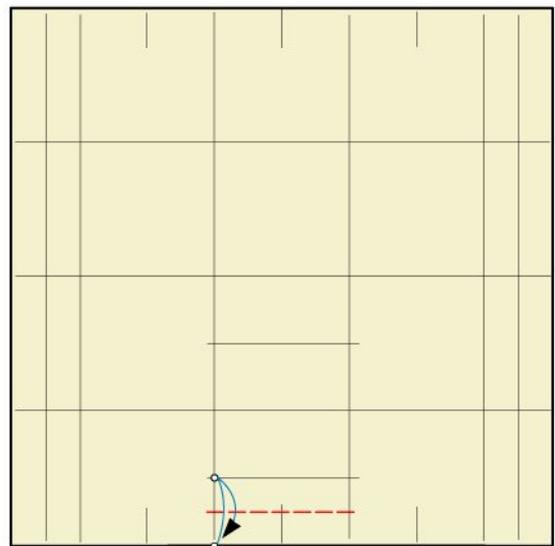
4

3 pieghe a valle



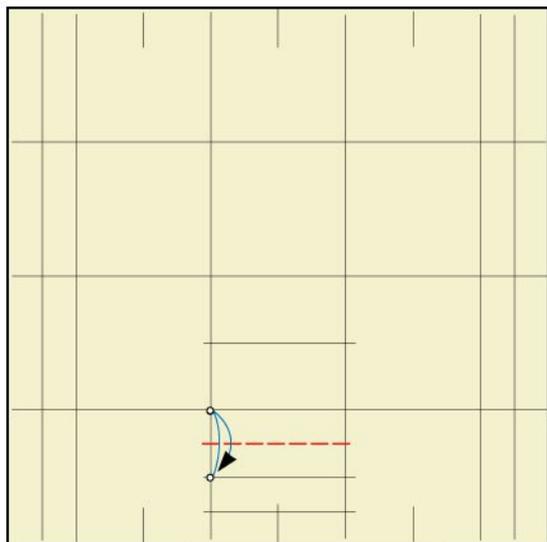
2 pieghe a valle

5



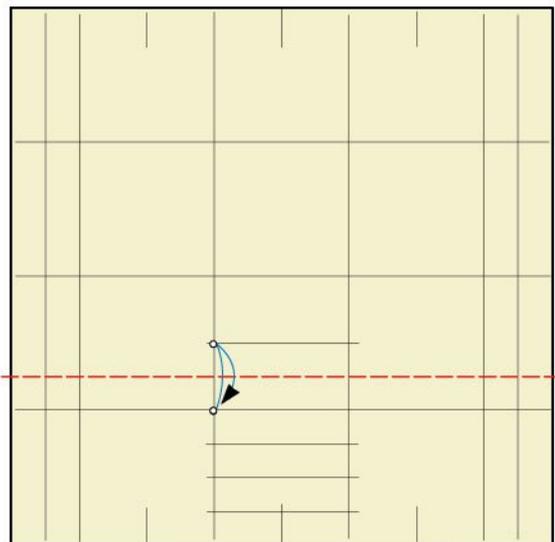
1 piega a valle

6



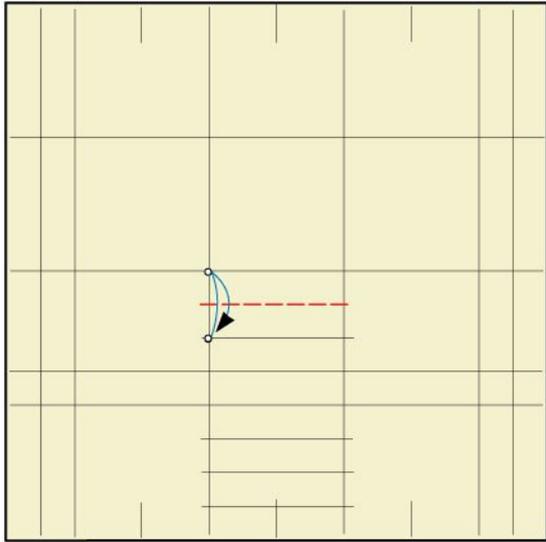
1 piega a valle

7



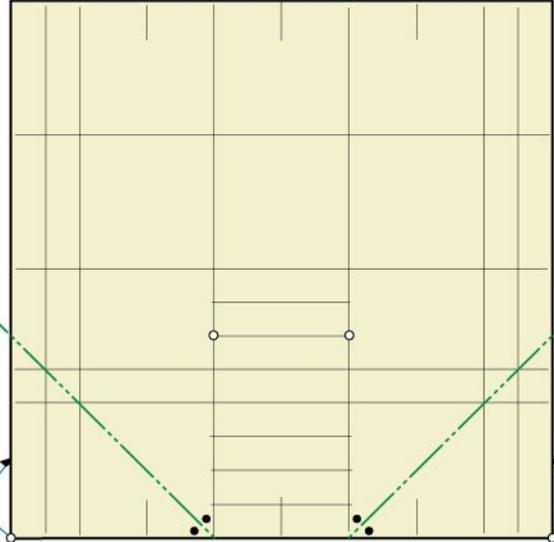
1 piega a valle

8



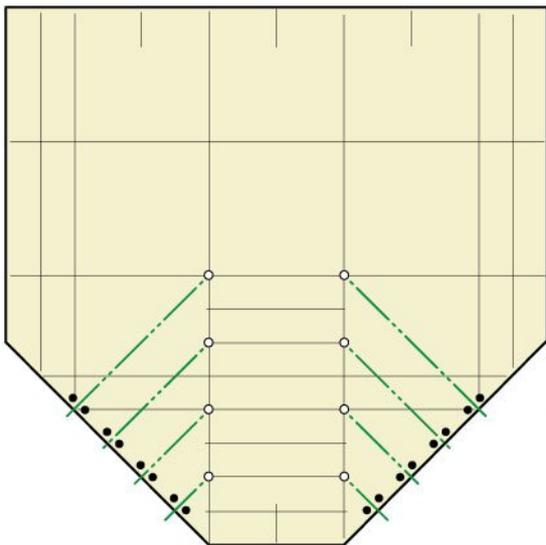
1 piega a valle

9



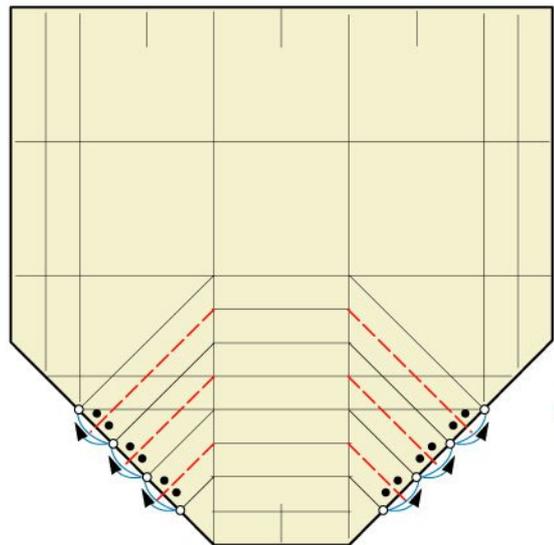
2 pieghe bisettrici a monte

10



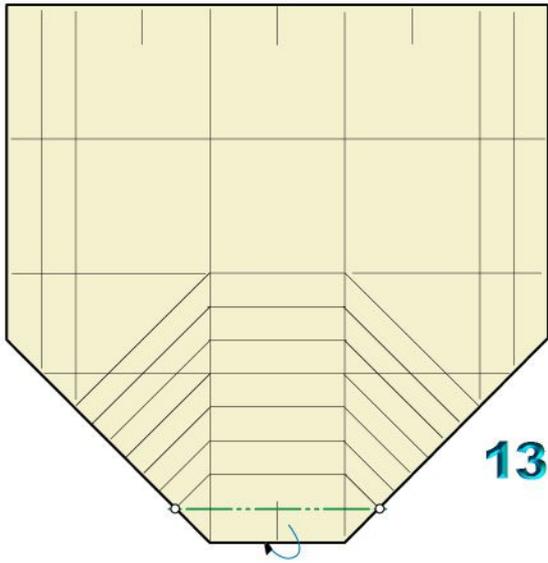
8 pieghe bisettrici a monte

11



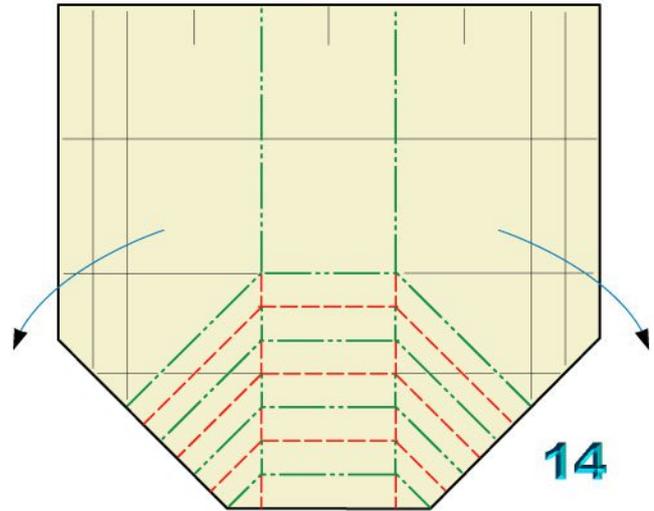
6 pieghe bisettrici a valle

12



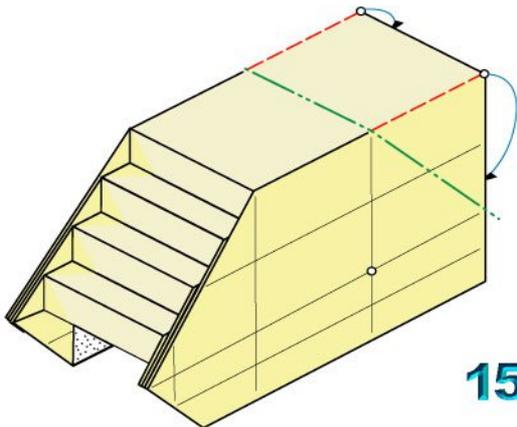
13

1 piega a monte



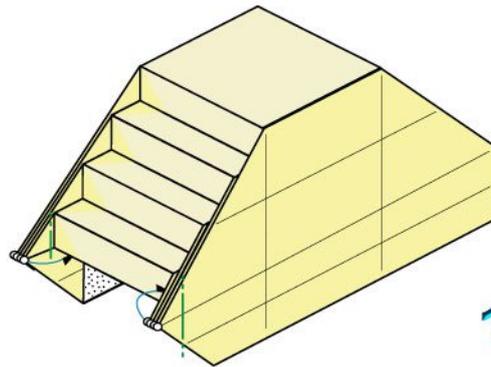
14

ripiegando alternativamente a valle ed a monte ruotate 3D



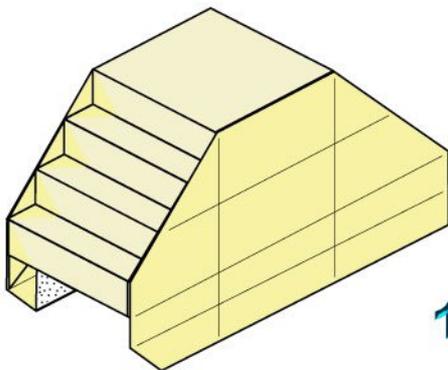
15

Ripiegando a valle ed a monte rovesciate il bordo indicato



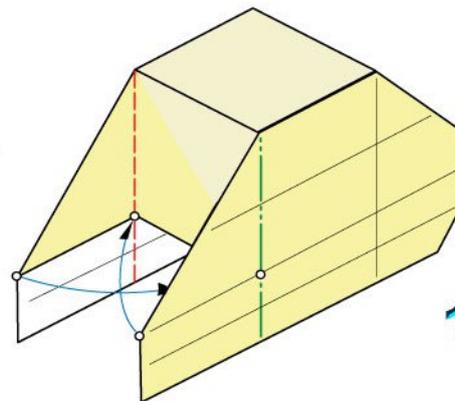
16

2 pieghe rovesce interne degli 8 vertici indicati



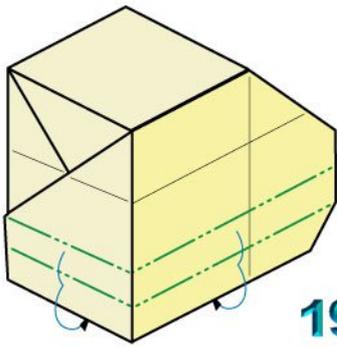
17

Ribaltate



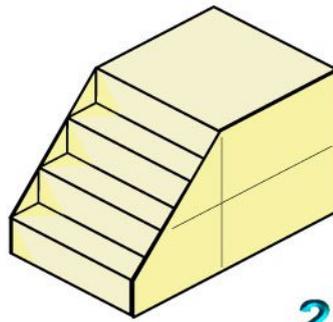
18

Ripiegate richiudendo le 2 appendici



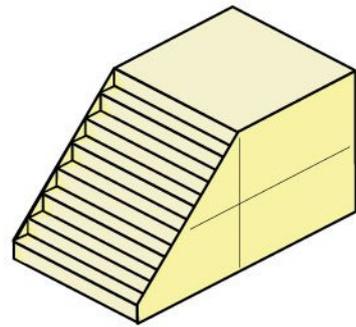
19

Ripiegate i bordi all' interno



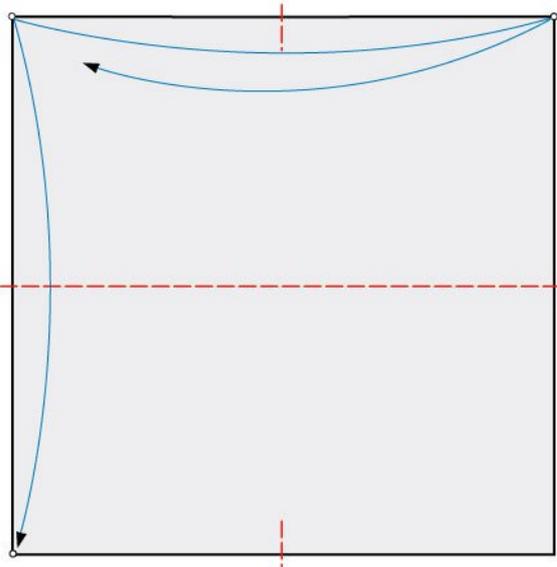
20

Rampa di scale completata semplificata



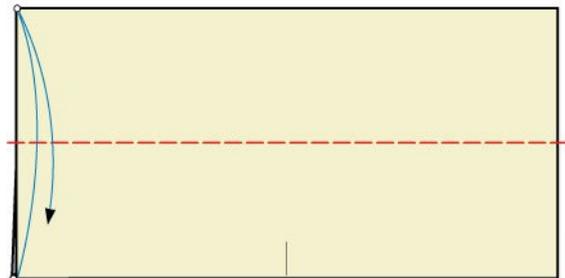
Se volete realizzare una rampa realistica dovete raddoppiare il numero di scalini

COSTRUZIONE DEL PIANEROTTOLO



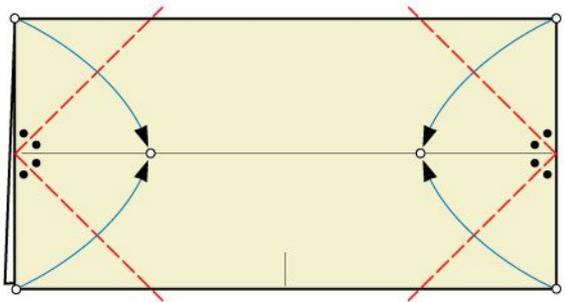
1

1 piega a valle, 2 più piccole e ruotate



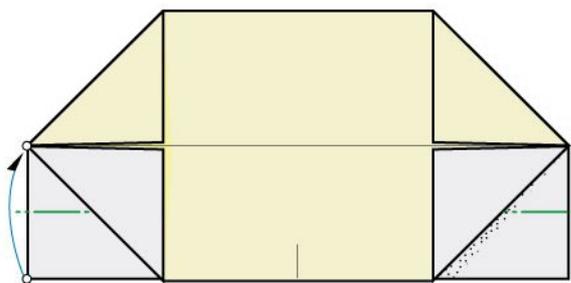
2

1 piega a valle



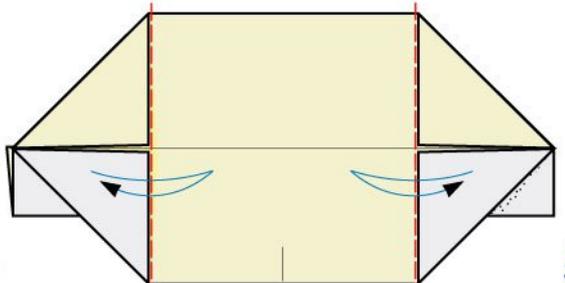
3

4 pieghe bisettrici a valle e ruotate



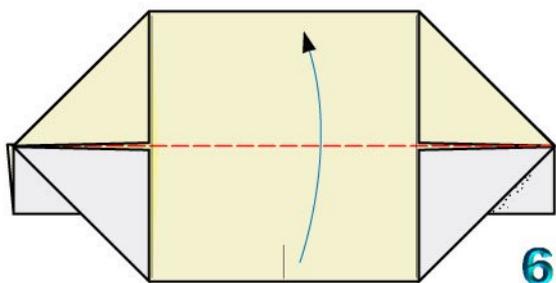
4

1 piega a monte (parzialmente nascosta) e ruotate



5

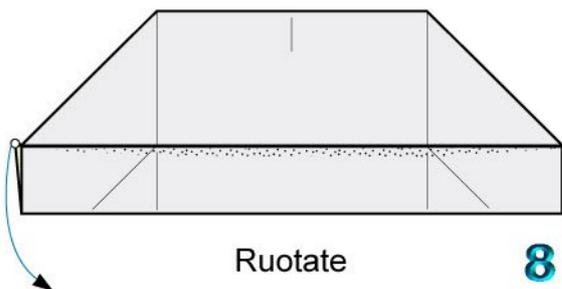
2 pieghe a valle



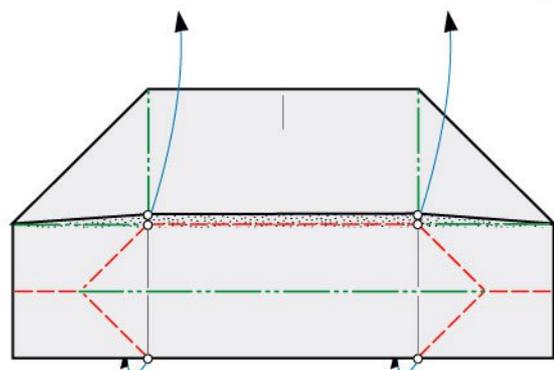
6
Ripiegando a valle ruotiamo
il bordo inferiore



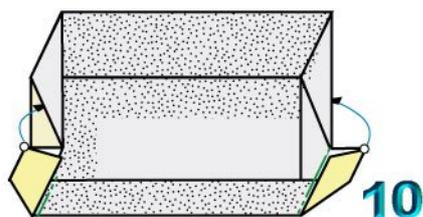
7
2 pieghe bisettrici a valle



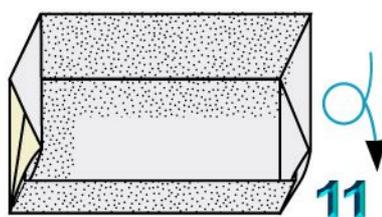
8
Ruotate



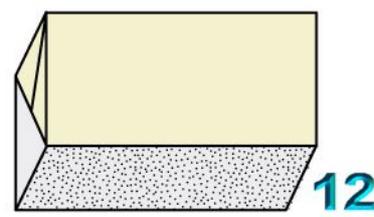
9
Ripiegando a monte ed a valle
ruotate modellando 3D



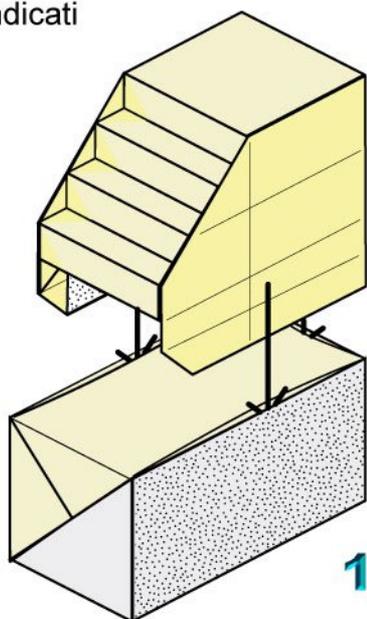
10
Ruotando all'indietro intascate
i vertici indicati



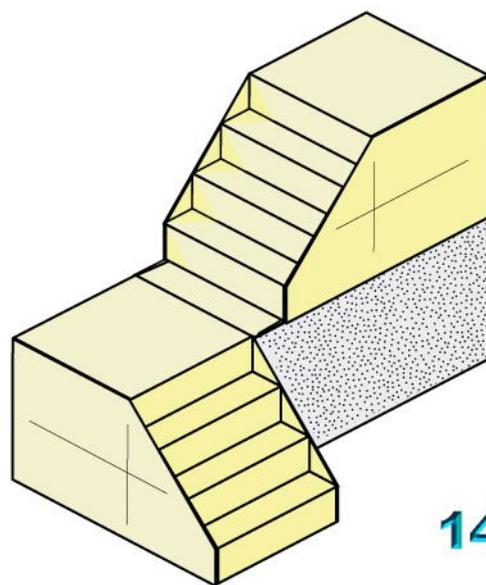
11
Ribaltate



12
Pianerottolo ultimato



13



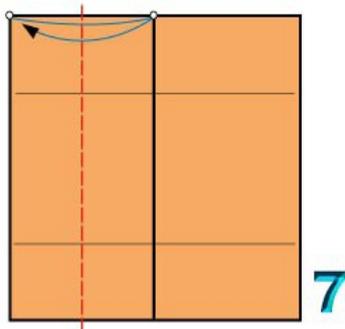
14

Montaggio della scala a 2 rampe: inserite i bordi di una rampa
nell'elemento pianerottolo ed accostatelo ad un'altra rampa

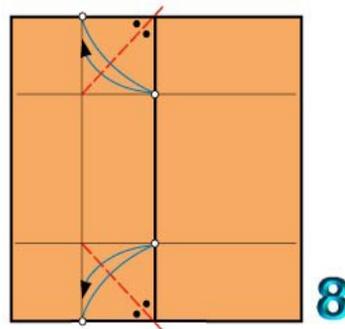
GUARDS' WALL WALK

Footpath at the top of a castle wall, guarded by a parapet with battlements. It consists of a stone-made floor slab and brick-made parapet and battlements.

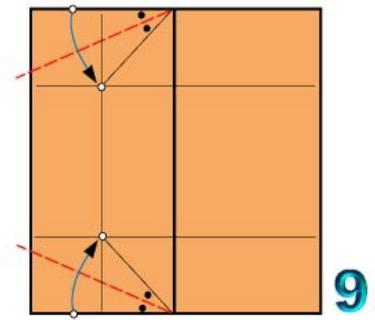
COSTRUZIONE DEL PIANO DI CALPESTIO



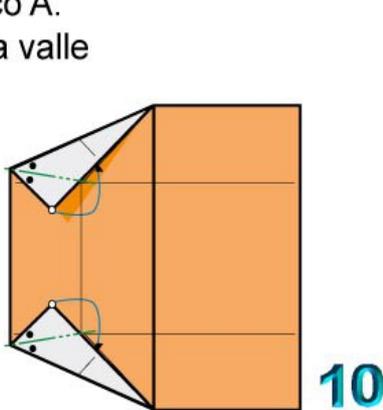
7
Partite dalla fig. n.6
del blocco A.
1 piega a valle



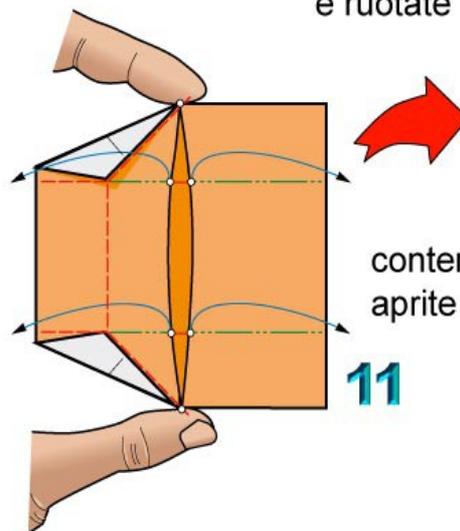
8
2 pieghe bisettrici a valle



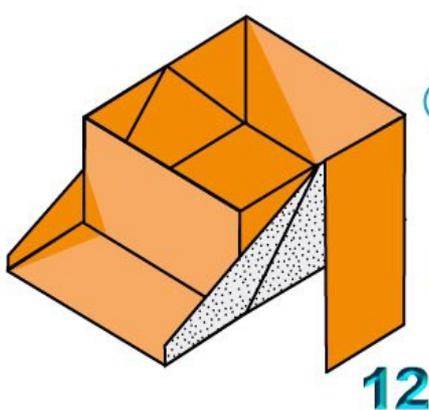
9
2 pieghe bisettrici a valle
e ruotate



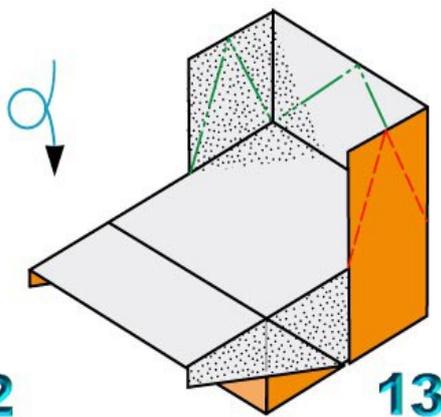
10
2 pieghe bisettrici
a monte e ruotate



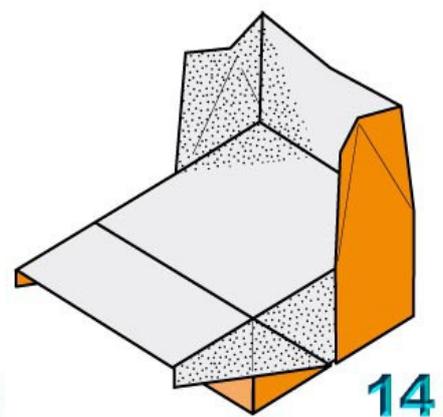
11
Ripiegando
e comprimendo
contemporaneamente,
aprite modellando 3D



12
Ribaltate



13
Con una serie di pieghe a
valle restringete il perimetro
del bordo superiore

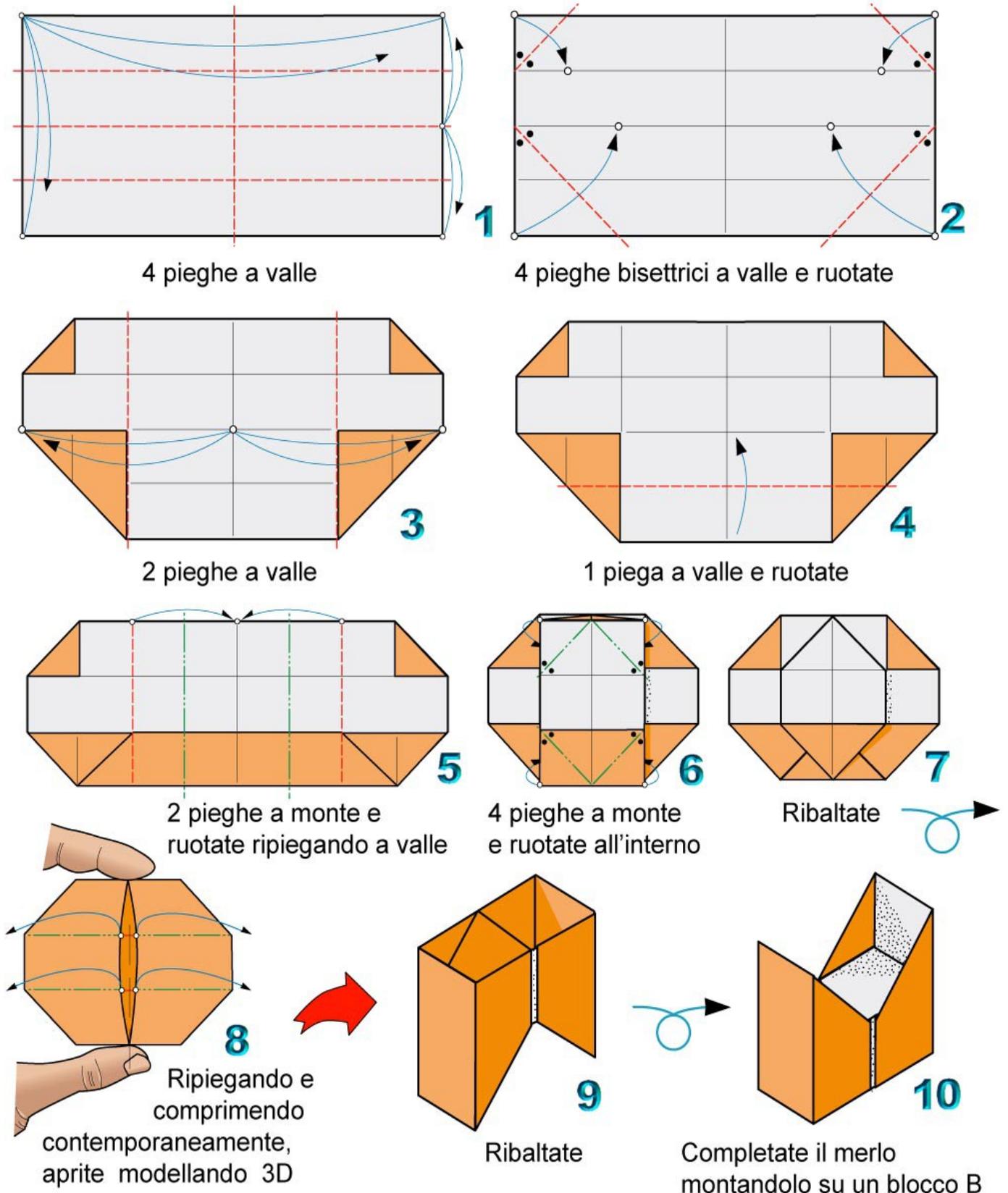


14
Piano di calpestio ultimato

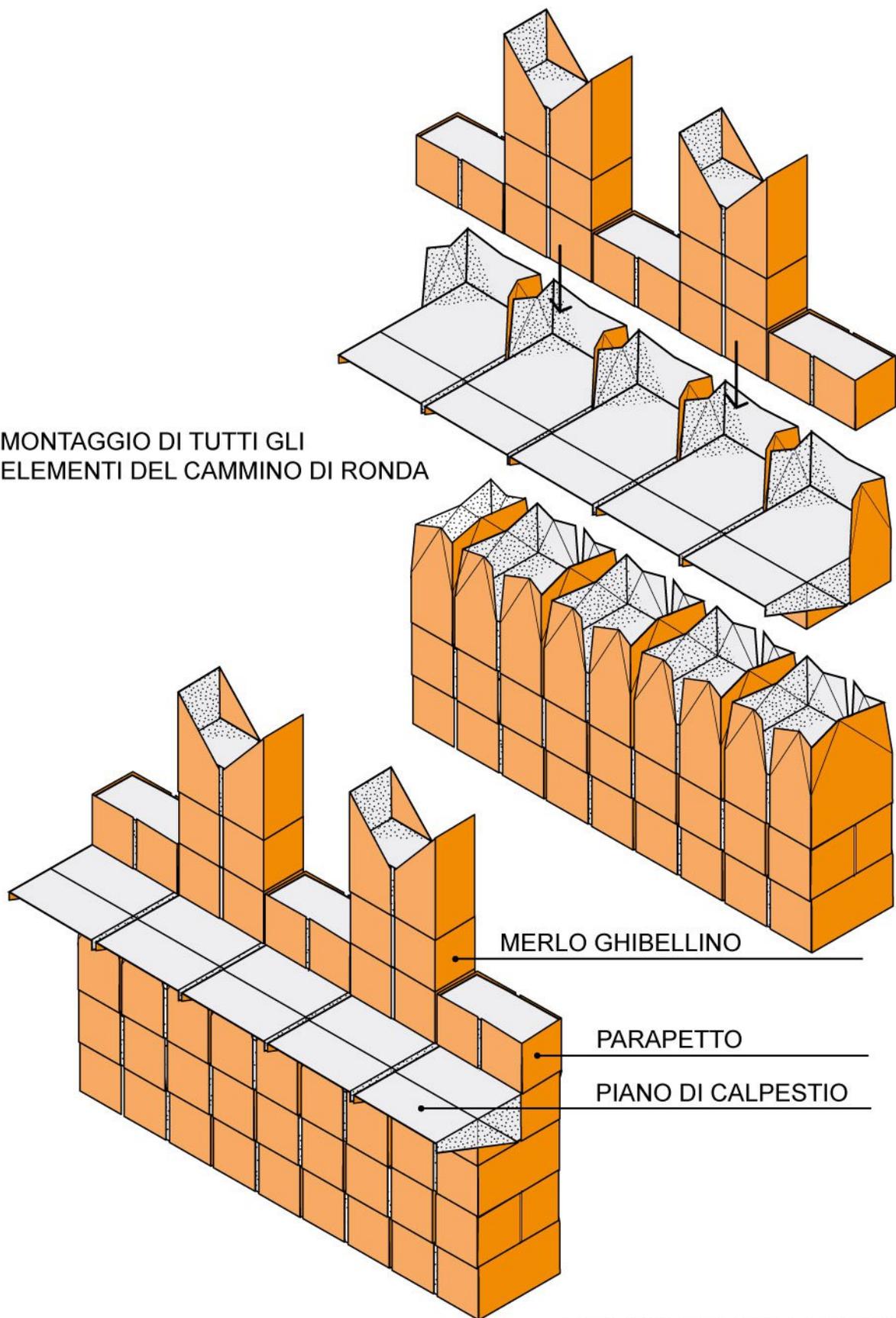
GHIBELLINE (or swallowtail) BATTLEMENT CONSTRUCTION

The battlements are raised up architectural elements of the rampart laid at regular intervals. They are designed to defend against enemy arrows. If necessary, they could be uprooted and dropping onto attackers who try to climb over the walls.

The rectangular ones were called "Guelph" and those with a swallowtail top were called "Ghibelline".

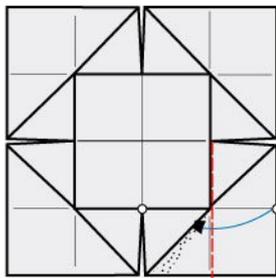


MONTAGGIO DI TUTTI GLI
ELEMENTI DEL CAMMINO DI RONDA



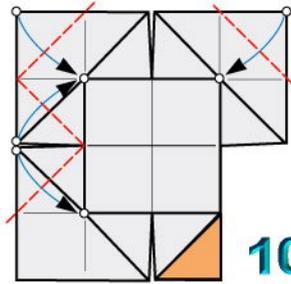
CAMMINO DI RONDA ULTIMATO

COSTRUZIONE DI UN MERLO Ghibellino ANGOLARE



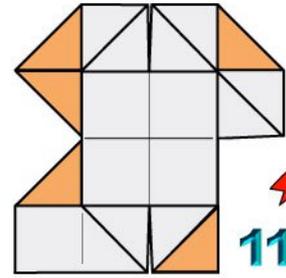
9

Partite dalla fig. n. 8 del blocco A4. 1 piega rovescia interna



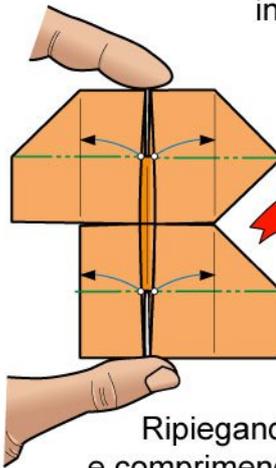
10

4 pieghe a valle e ruotate



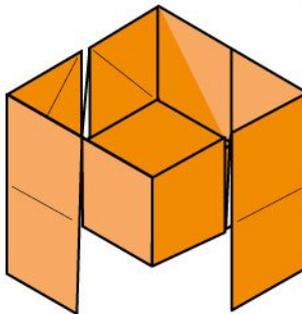
11

Ribaltate



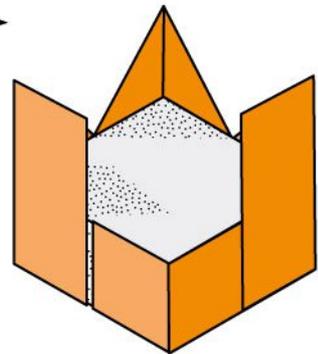
12

Ripiegando e comprimendo contemporaneamente, aprite modellando 3D



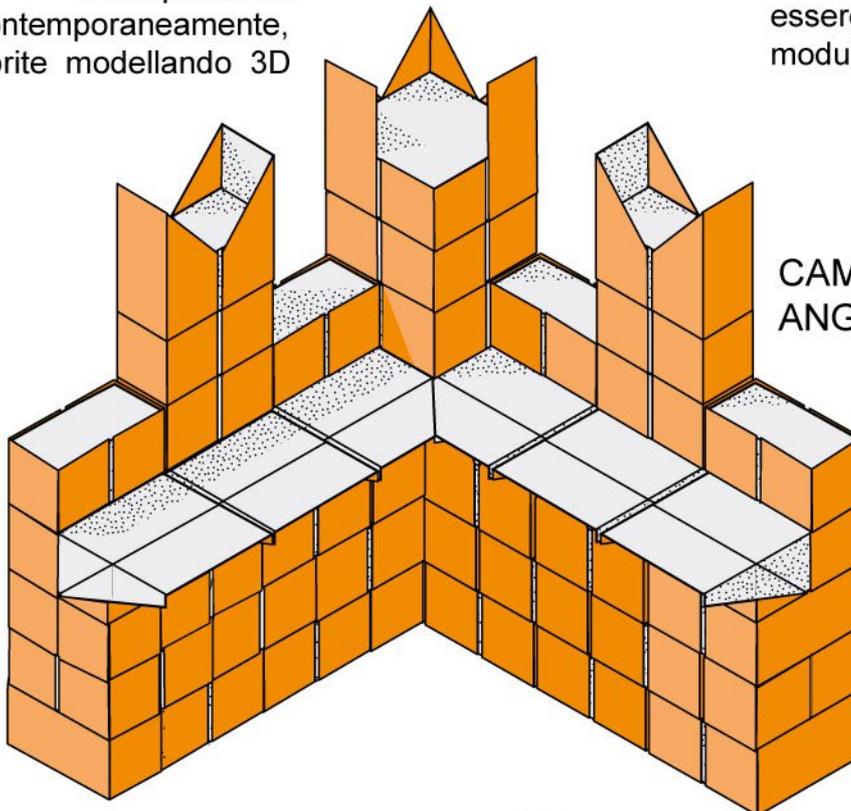
13

Ribaltate



14

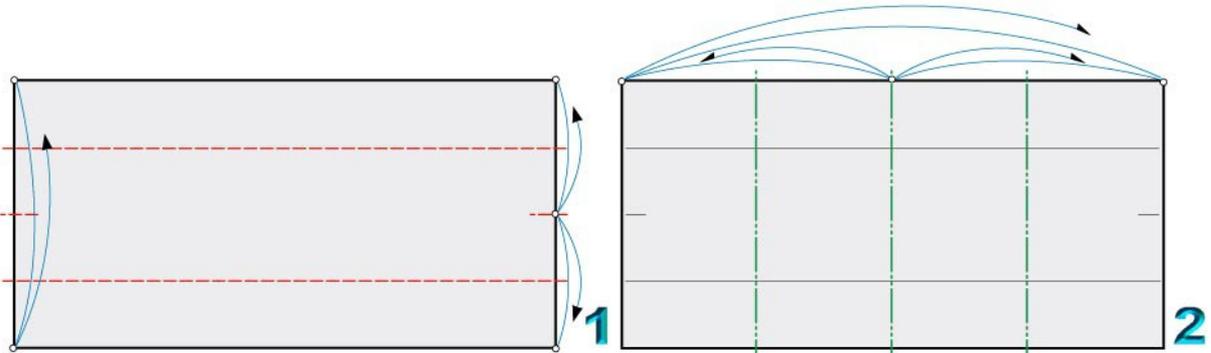
La sommità ultimata deve essere montata su altri 2 moduli A



CAMMINO DI RONDA ANGOLARE ULTIMATO

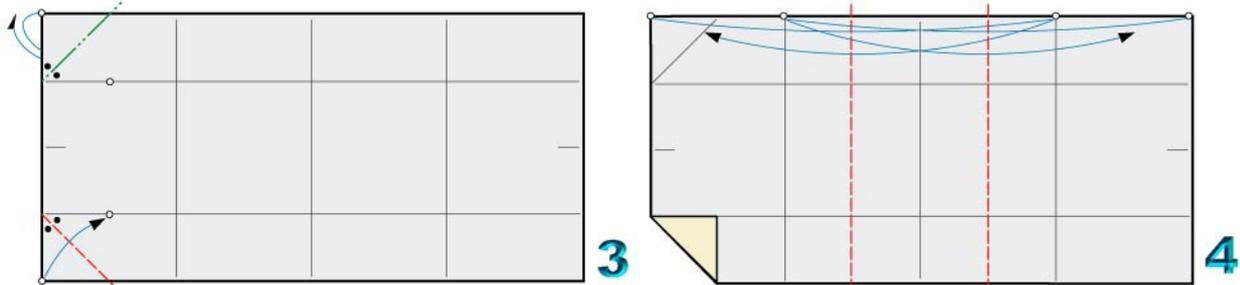
CANTILEVERED GUARDS' WALL WALK WITH MACHILICATIONS

The machilocations are openings or slots accessible from the guards' wall walk through which stones and hot liquids could be dropped on the enemies who managed to climb over the walls or were at the foot of the walls.



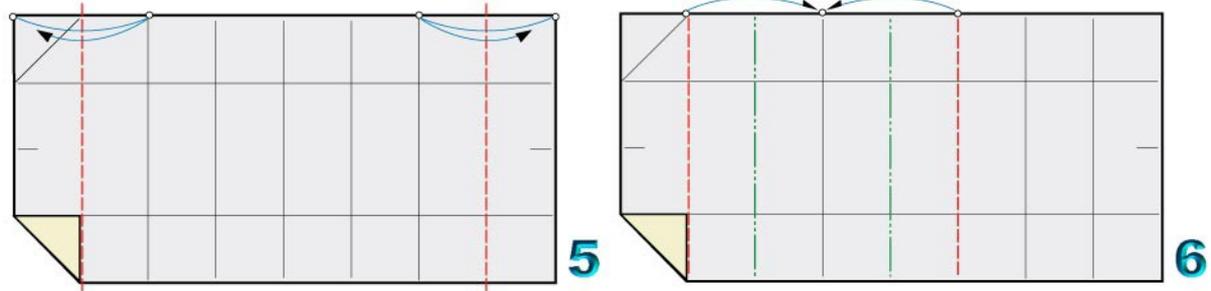
Eseguite prima le 2 piccole pieghe a valle centrali e poi le altre 2 longitudinali

3 pieghe a monte



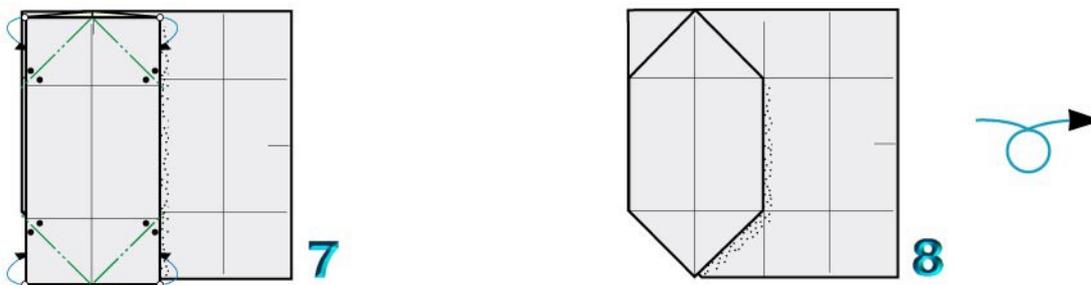
1 piega bisettrice a monte, una a valle e ruotate

2 pieghe a valle



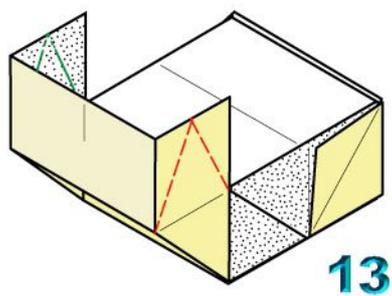
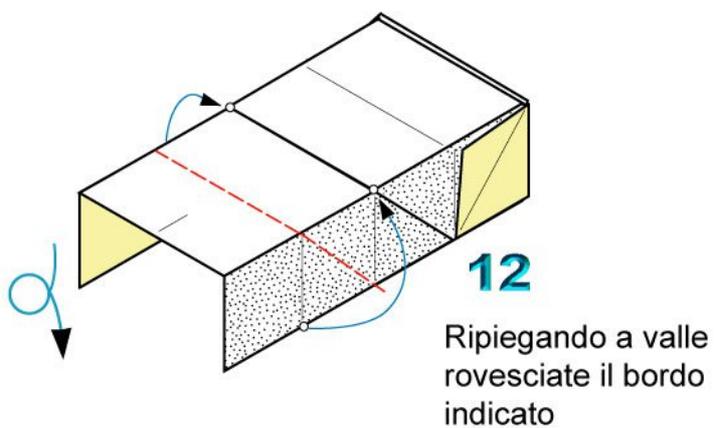
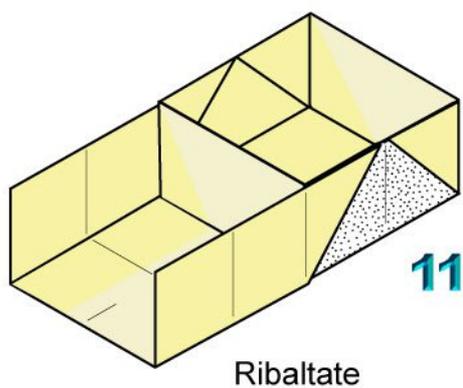
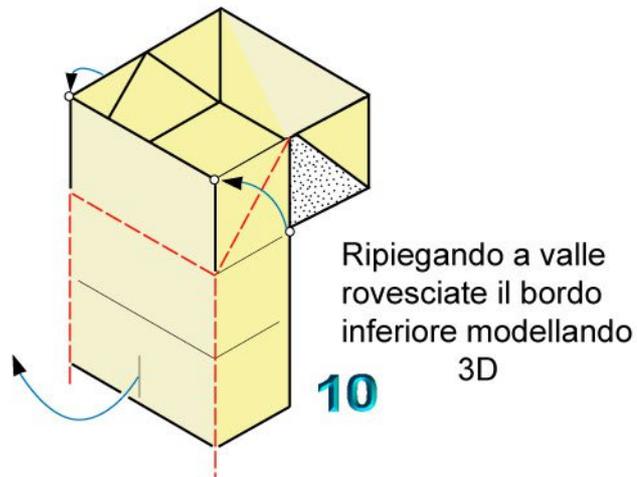
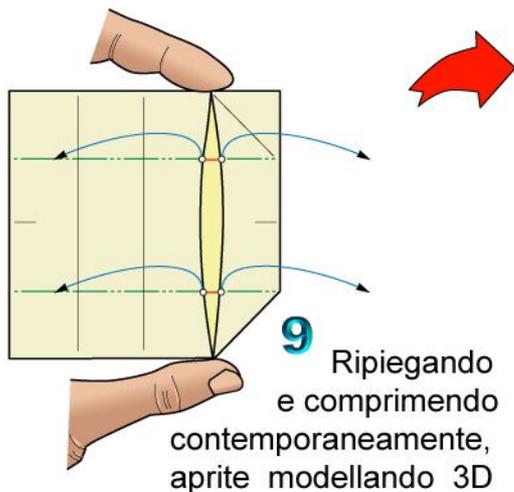
2 pieghe a valle

Ruotate ripiegando a valle ed a monte

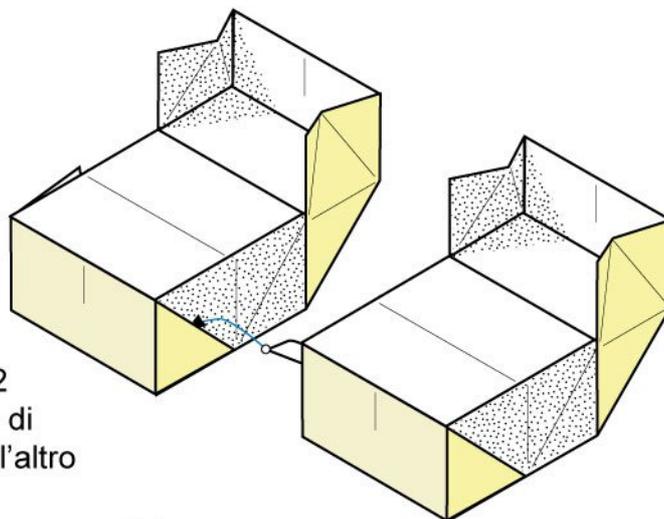
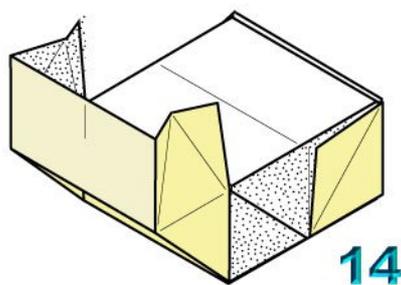


4 pieghe bisettrici a monte e ruotate all'interno

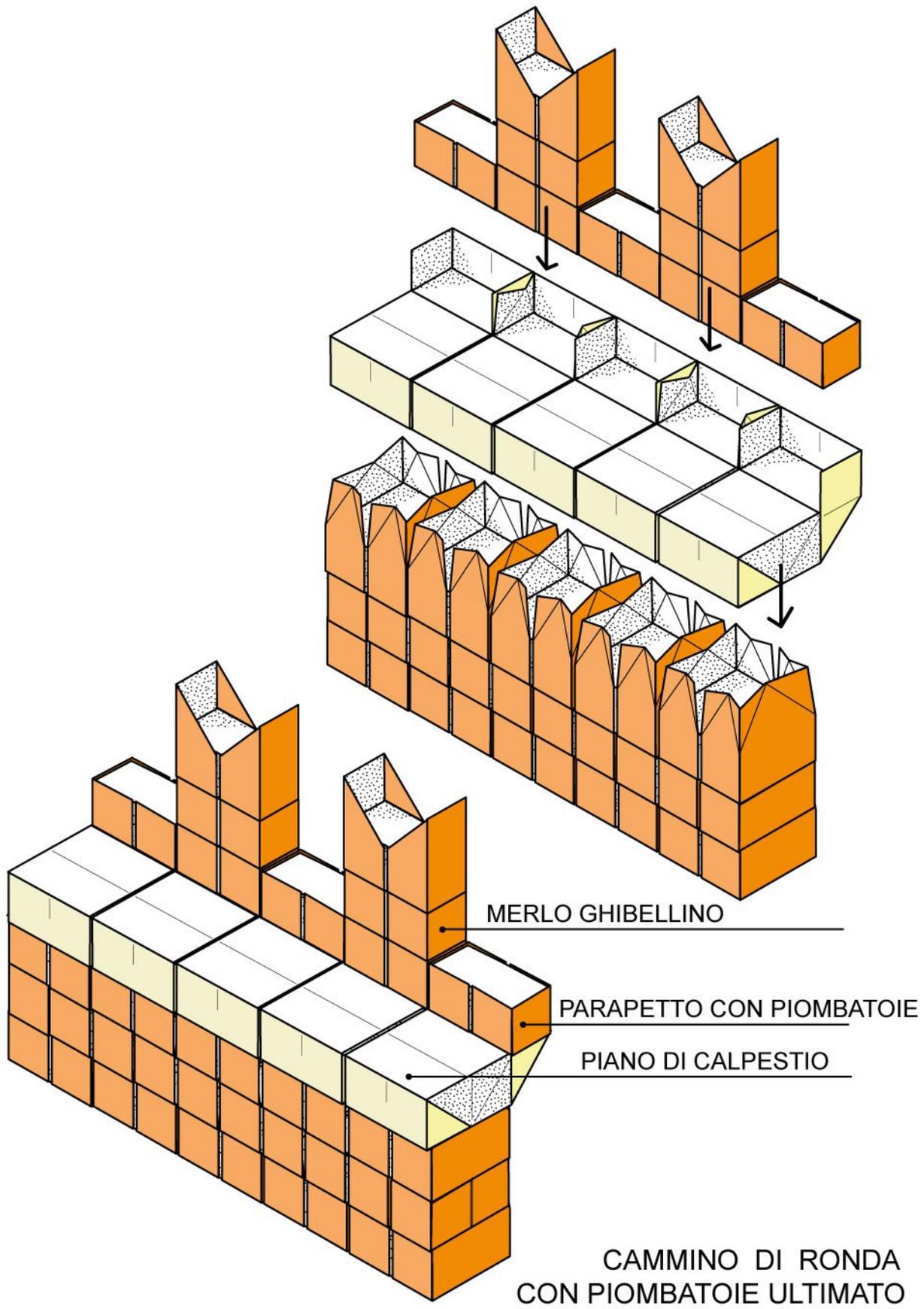
Ribaltate



Con una serie di pieghe a valle restringete perimetro del bordo superiore

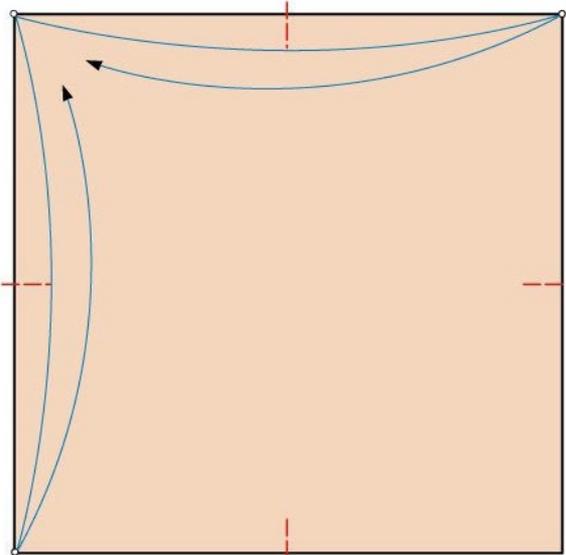


Per collegare saldamente 2 elementi inserite un vertice di uno nella tasca laterale dell'altro



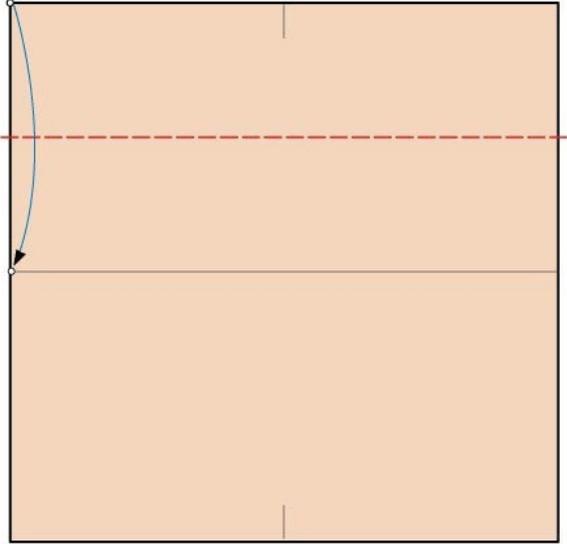
DRAWBRIDGE

It was a wooden deck crossing a moat with one edge hinged or pivoting at the gatehouse. The opposite end could be lifted to impede entering the castle.



1

4 piccole pieghe a valle



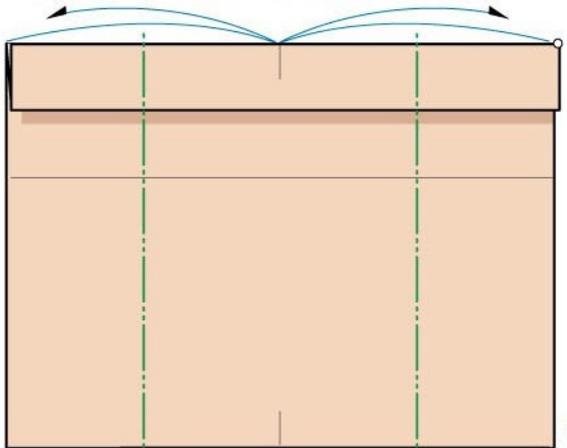
2

1 piega a valle e ruotate



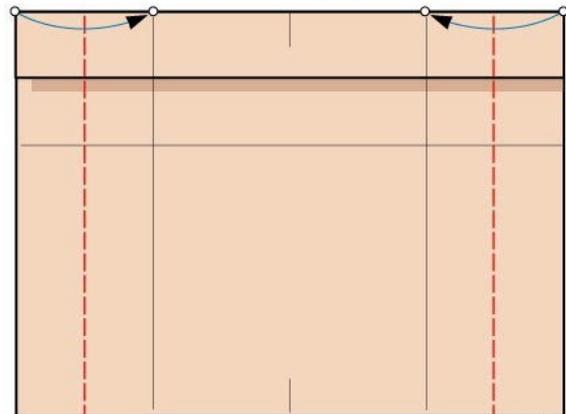
3

1 piega a valle e ruotate



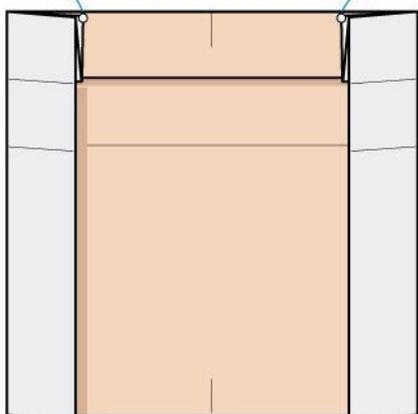
4

2 pieghe a monte



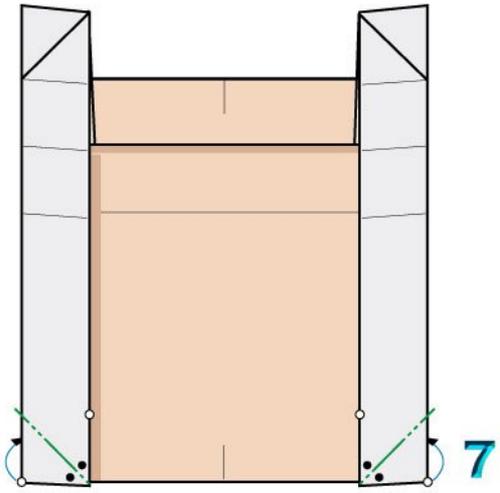
5

2 pieghe a valle

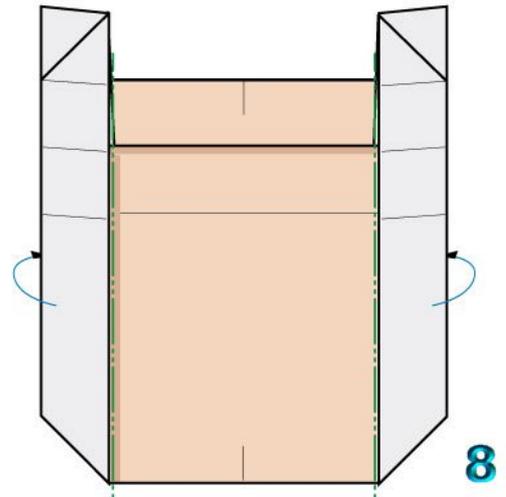


6

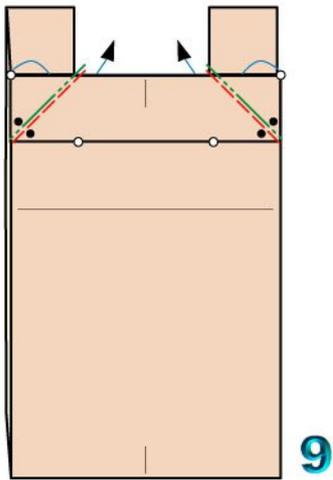
2 piccole pieghe a valle (non visibili) ed estraete 2 superfici quadrate



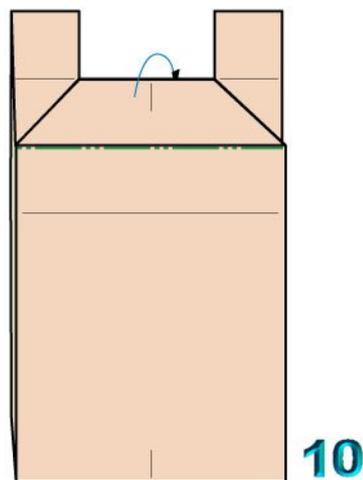
2 pieghe bisettrici a monte e ruotate



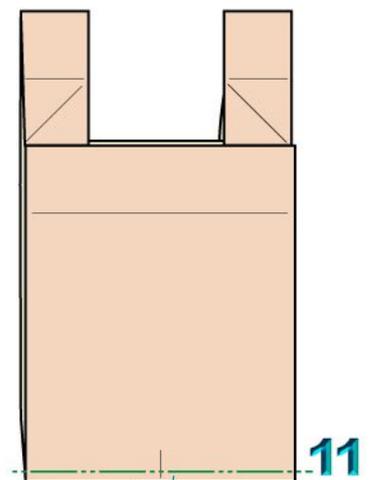
Ripiegando a monte ruotate



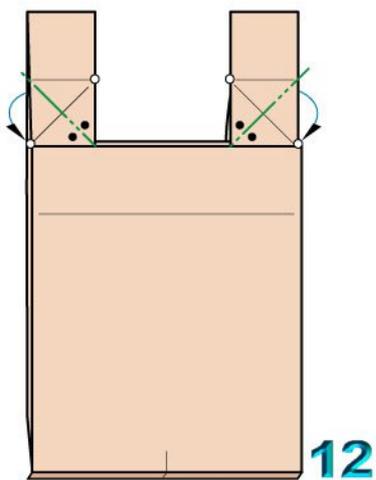
2 pieghe rovesce interne



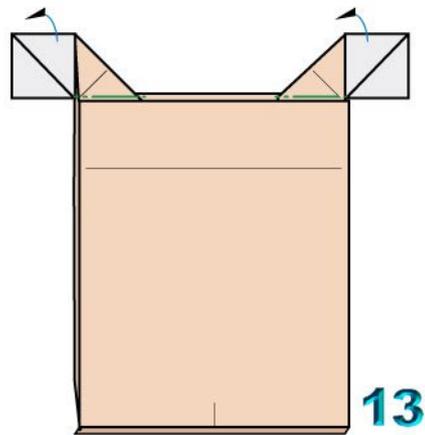
1 piega rovescia interna



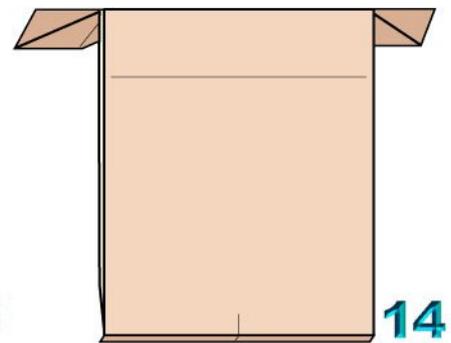
1 piega a monte



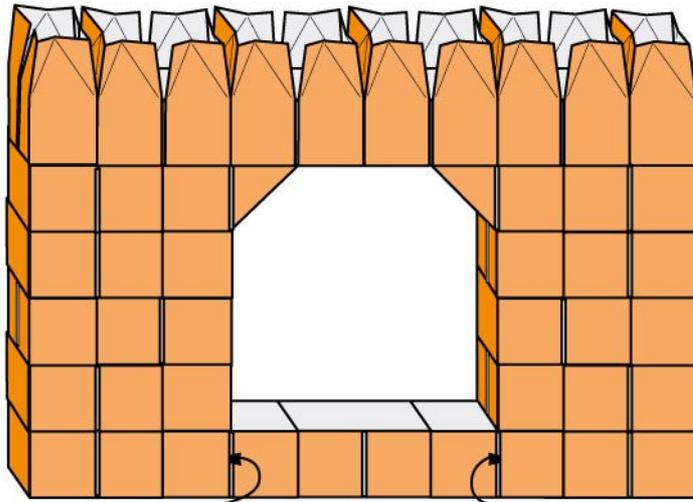
2 pieghe bisettrici a monte e ruotate



2 pieghe a monte e ruotate verso il basso

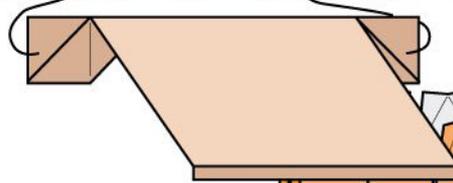


ponte levatoio ultimato

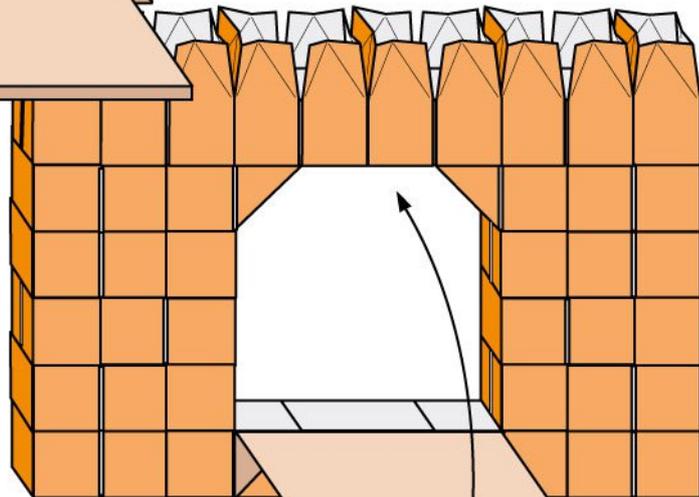


Montaggio del ponte levatoio:
inserite le appendici laterali
del ponte nelle fessure centrali
di 2 blocchi A2

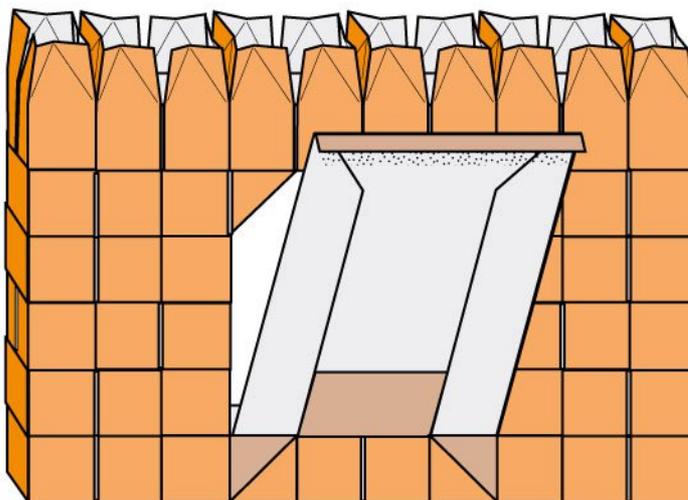
15



Ponte levatoio abbassato



16



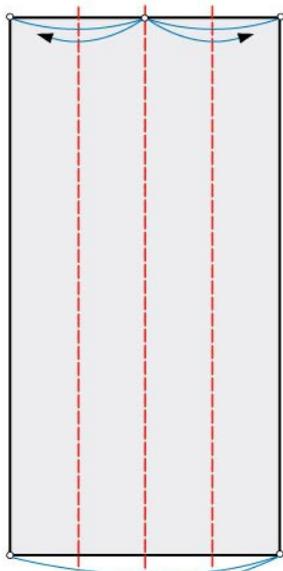
Ponte levatoio alzato

17

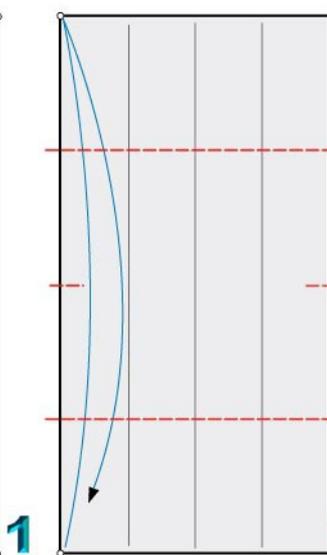
HINGED DOOR

For Gothic double doors use two rectangles of brown paper with a colour resembling wood.

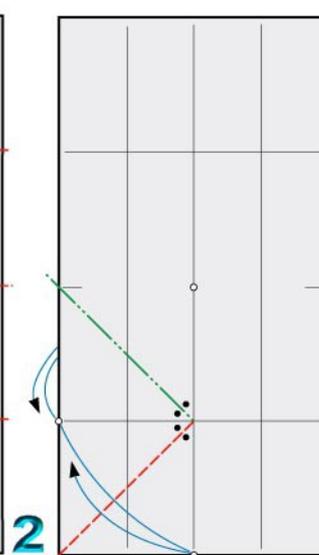
This is quite a difficult construction, so it is sometimes preferable to use scissors.



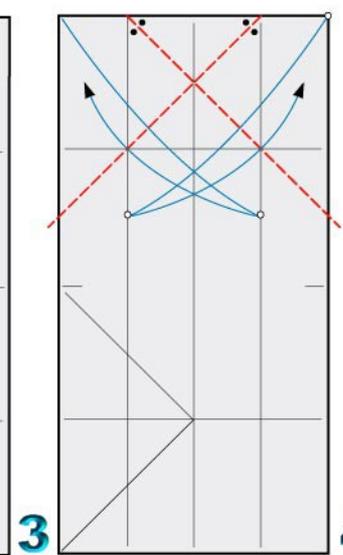
3 pieghe a valle



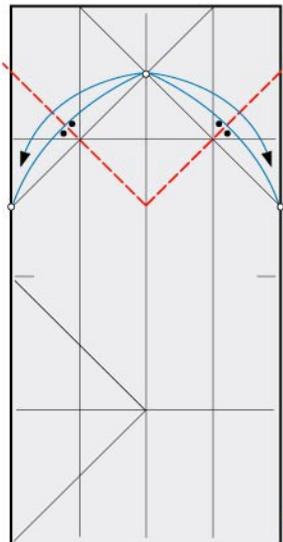
4 pieghe a valle,
2 piccole



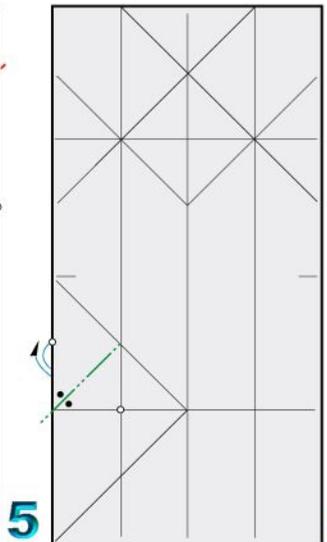
1 piega bisettrice
a valle ed 1 a monte



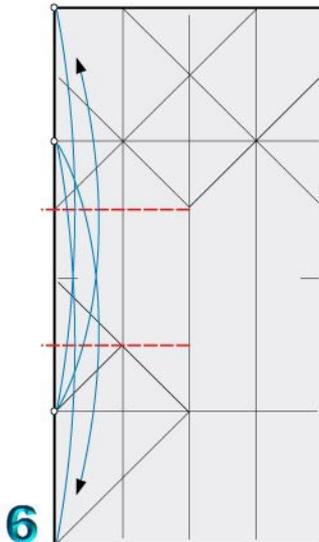
2 pieghe bisettrici
a valle



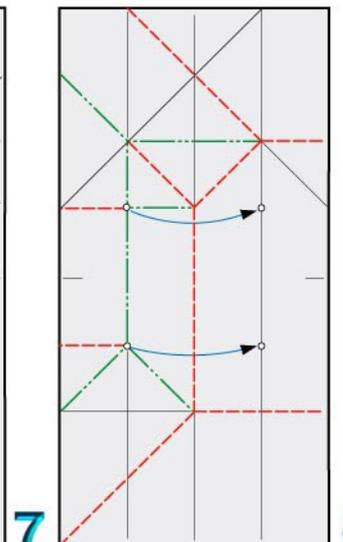
2 pieghe bisettrici
a valle



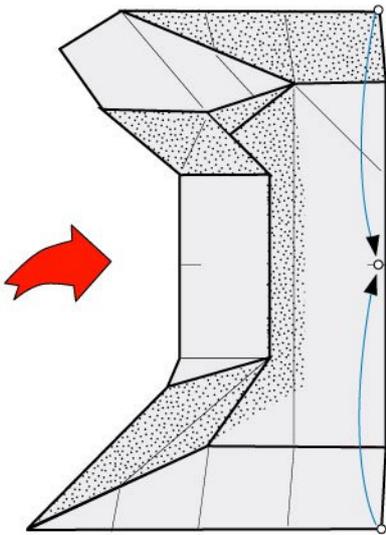
1 piega bisettrice
a monte



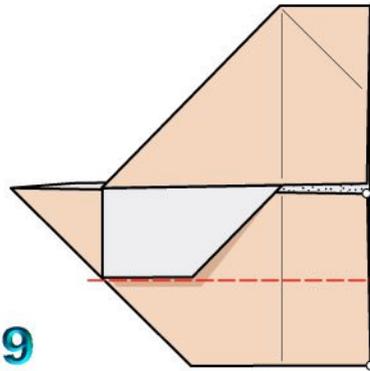
2 pieghe a valle



Ruotate ripiegando
a valle ed a monte

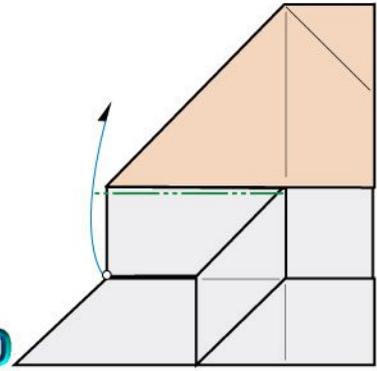


9



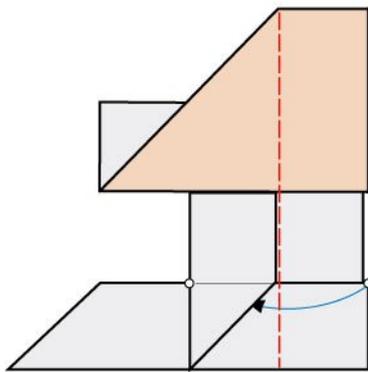
10

1 piega a valle e ruotate



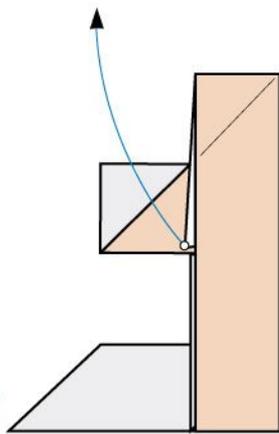
11

1 piega a monte e ruotate all'indietro



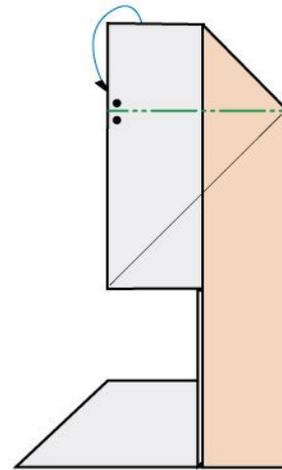
12

1 piega a valle e ruotate intascando



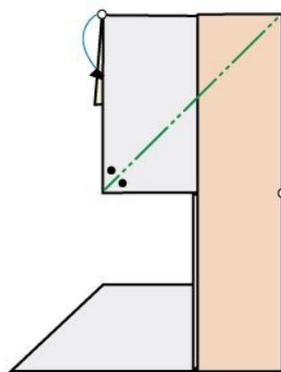
13

estraete



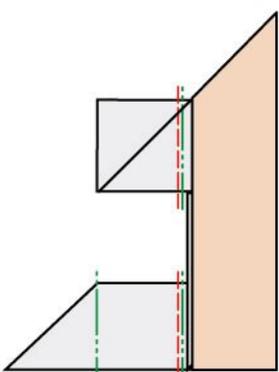
14

1 piega bisettrice a monte e ruotate all'indietro



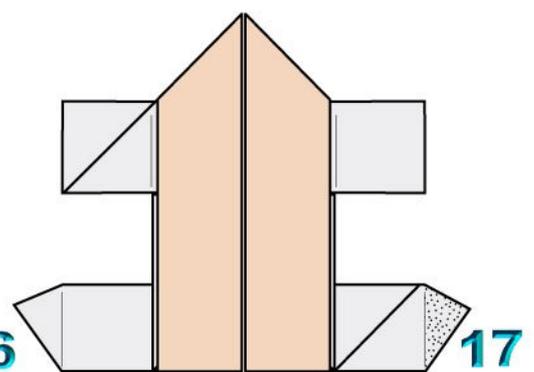
15

1 piega bisettrice a monte e ruotate all'indietro



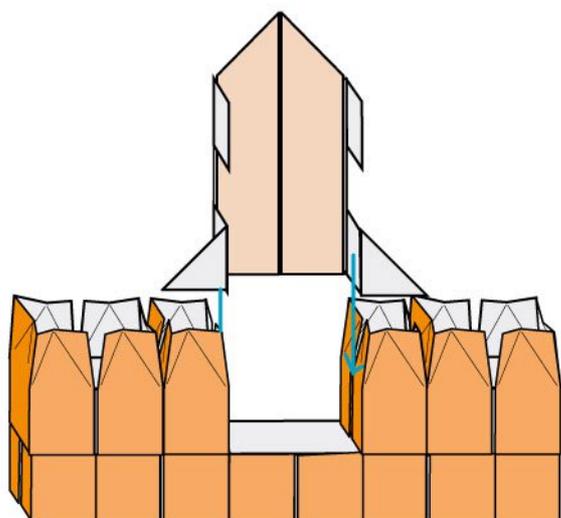
16

1 piega a monte e ruotate a 90°. 2 pieghe a valle ed a monte per creare 2 cerniere



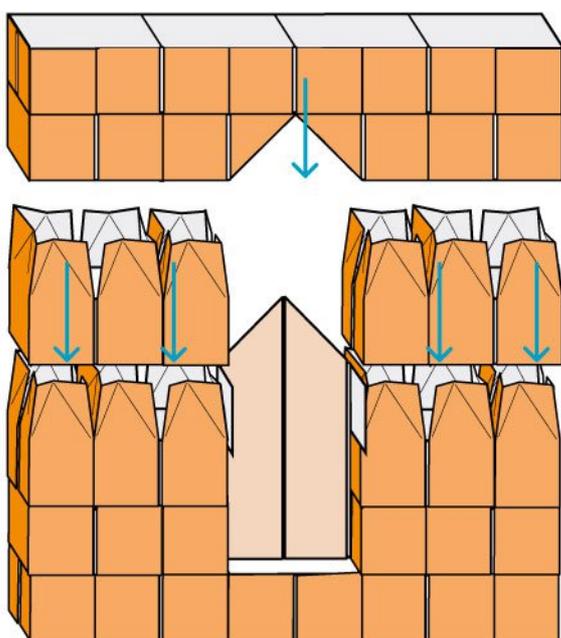
17

porta a 2 ante completata



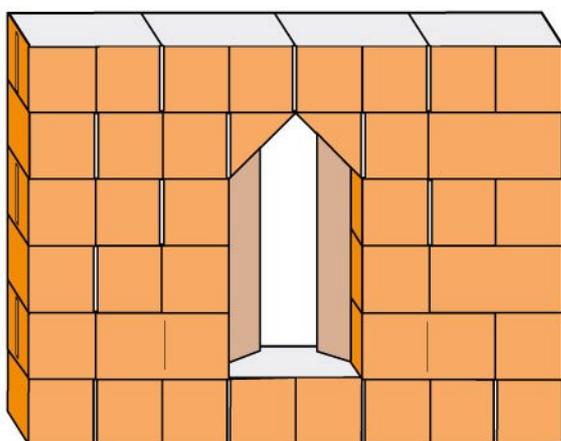
Montaggio della porta:
inserite le appendici
laterali inferiori della
porta nelle fessure
centrali di 2
semiblocchi B

18



Inserite le appendici
laterali superiori della
porta nelle fessure
centrali di 2
semiblocchi B

19

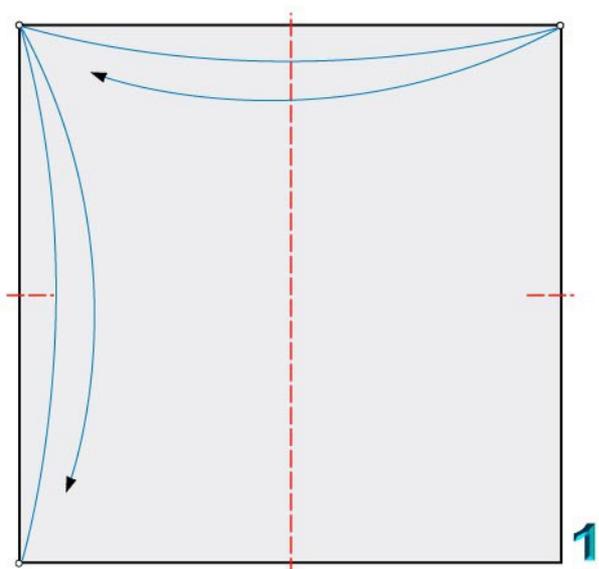


Porta gotica a 2
battenti ultimata

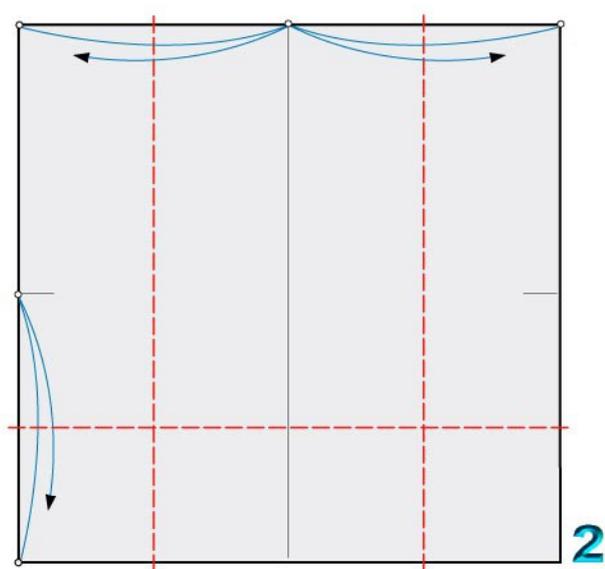
20

HINGED GATE

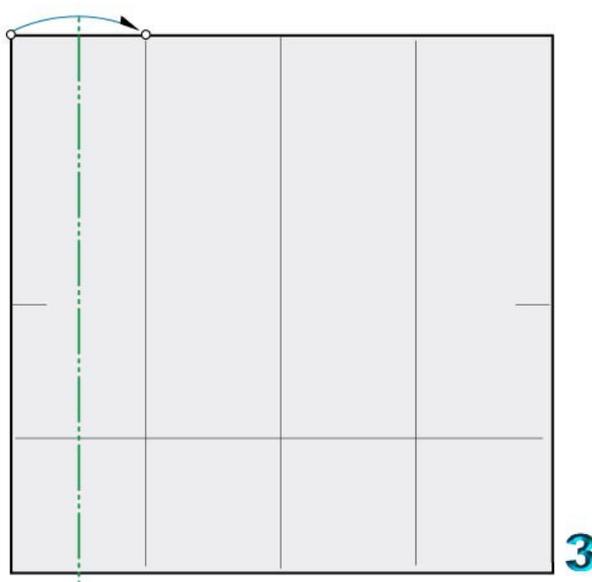
Use two squares of brown paper to make the double-leaf gate. As with the door, it is advisable to use scissors.



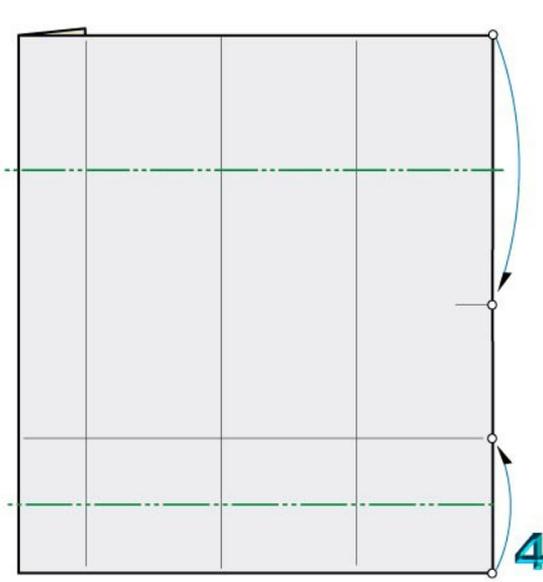
3 pieghe a valle, 2 piccole



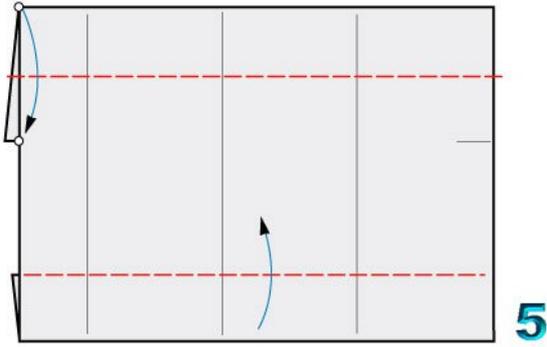
3 pieghe a valle



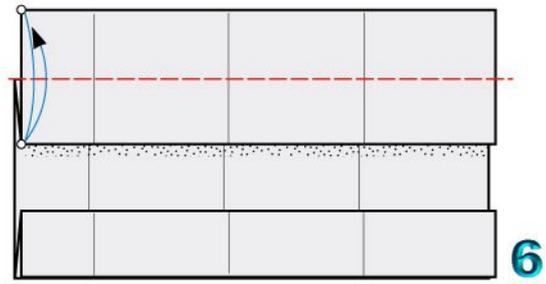
1 piega a monte e ruotate



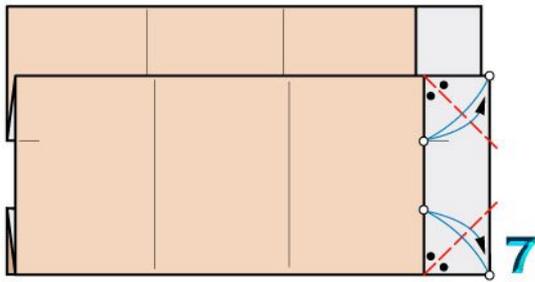
2 pieghe a monte e ruotate



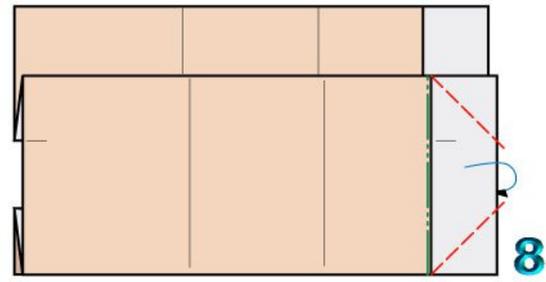
2 pieghe a valle e ruotate



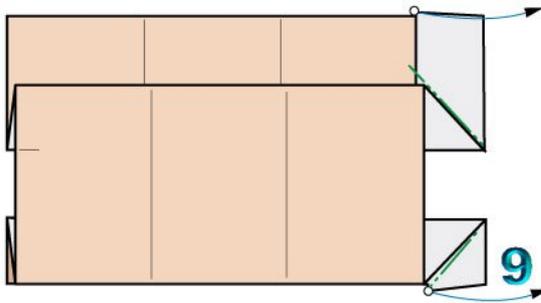
1 piega a valle e ribaltate



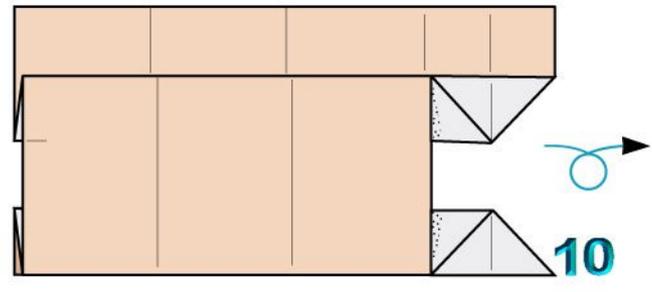
2 pieghe bisettrici a valle



Ripiegando a valle ed a monte ruotate all'interno la superficie indicata



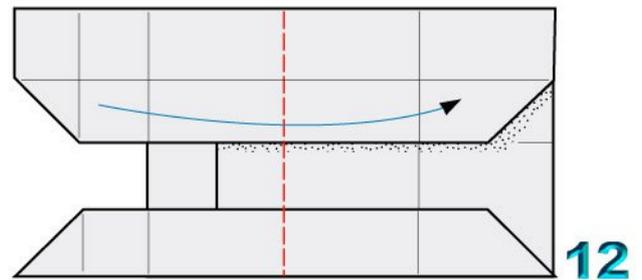
Estraete le 2 appendici indicate



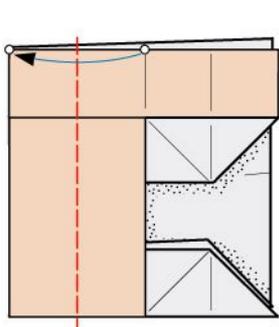
Ribaltate



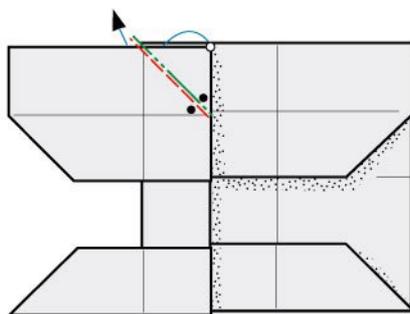
2 pieghe a monte e ruotate all'interno



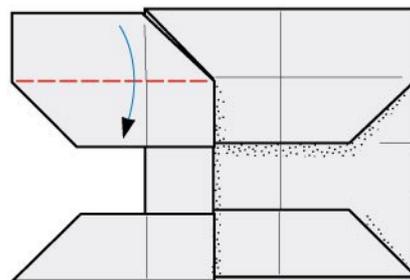
1 piega a valle e ruotate



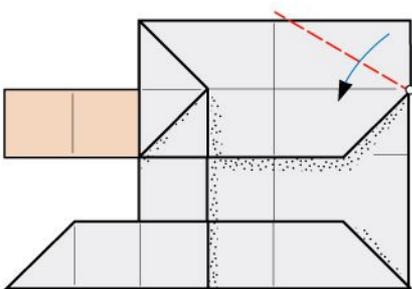
1 piega a valle e ruotate **13**



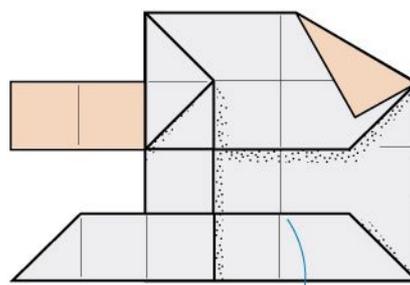
1 piega rovescia interna **14**



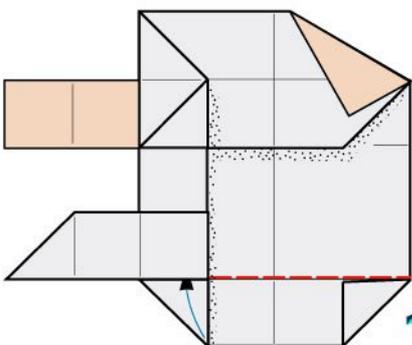
Ruotate ripiegando a valle **15**



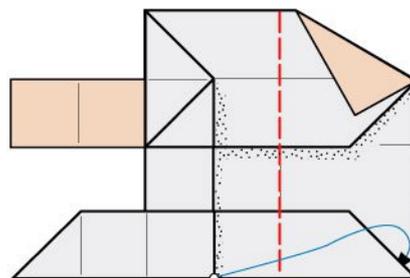
1 piega a valle e ruotate **16**



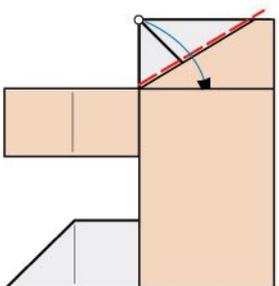
1 piega a valle ed 1 a monte nascoste, e ruotate **17**



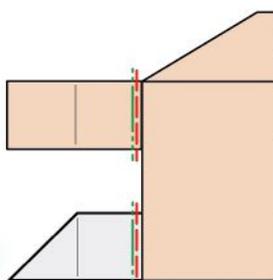
1 piega a valle e ruotate intascando **18**



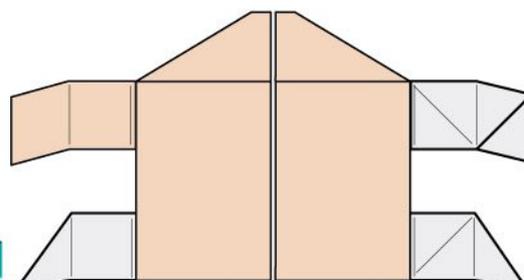
1 piega a valle e ruotate intascando **19**



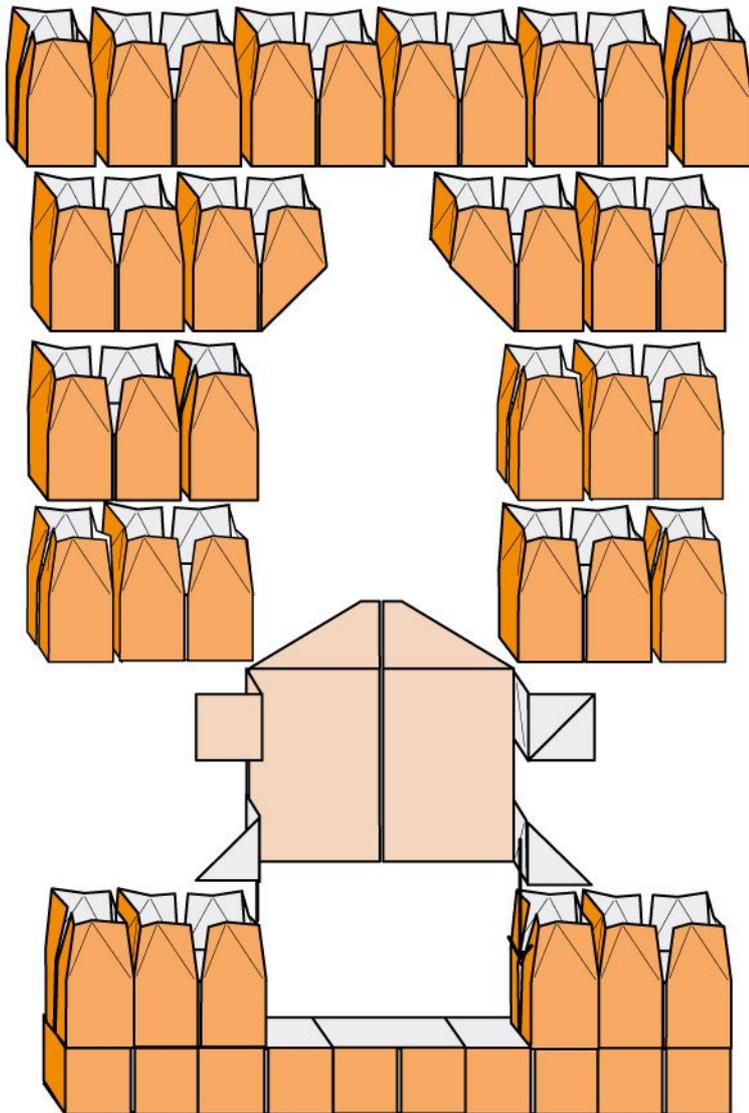
1 piega a valle e ruotate intascando e bloccando **20**



2 pieghe a valle, 2 a monte sovrapposte per creare 2 cerniere Anta di portone ultimata **21**

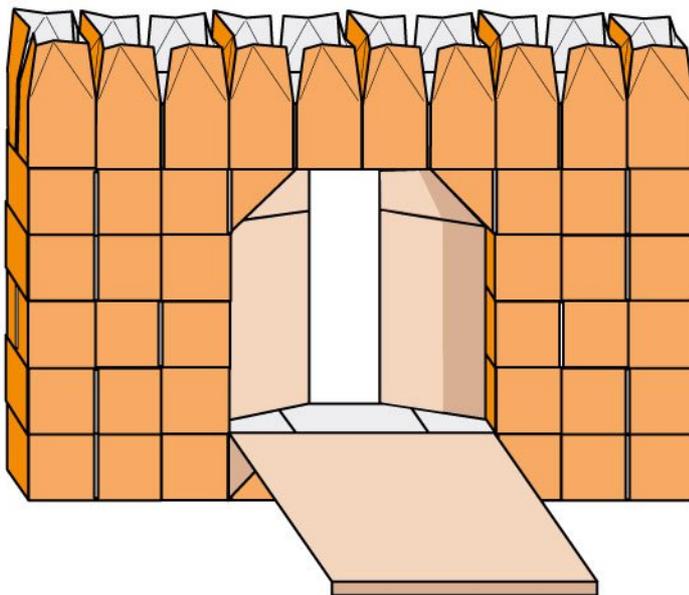


portone a 2 ante ultimato



Montaggio del portone:
inserite le appendici
laterali del portone nelle
fessure centrali di 4
semiblocchi B

1



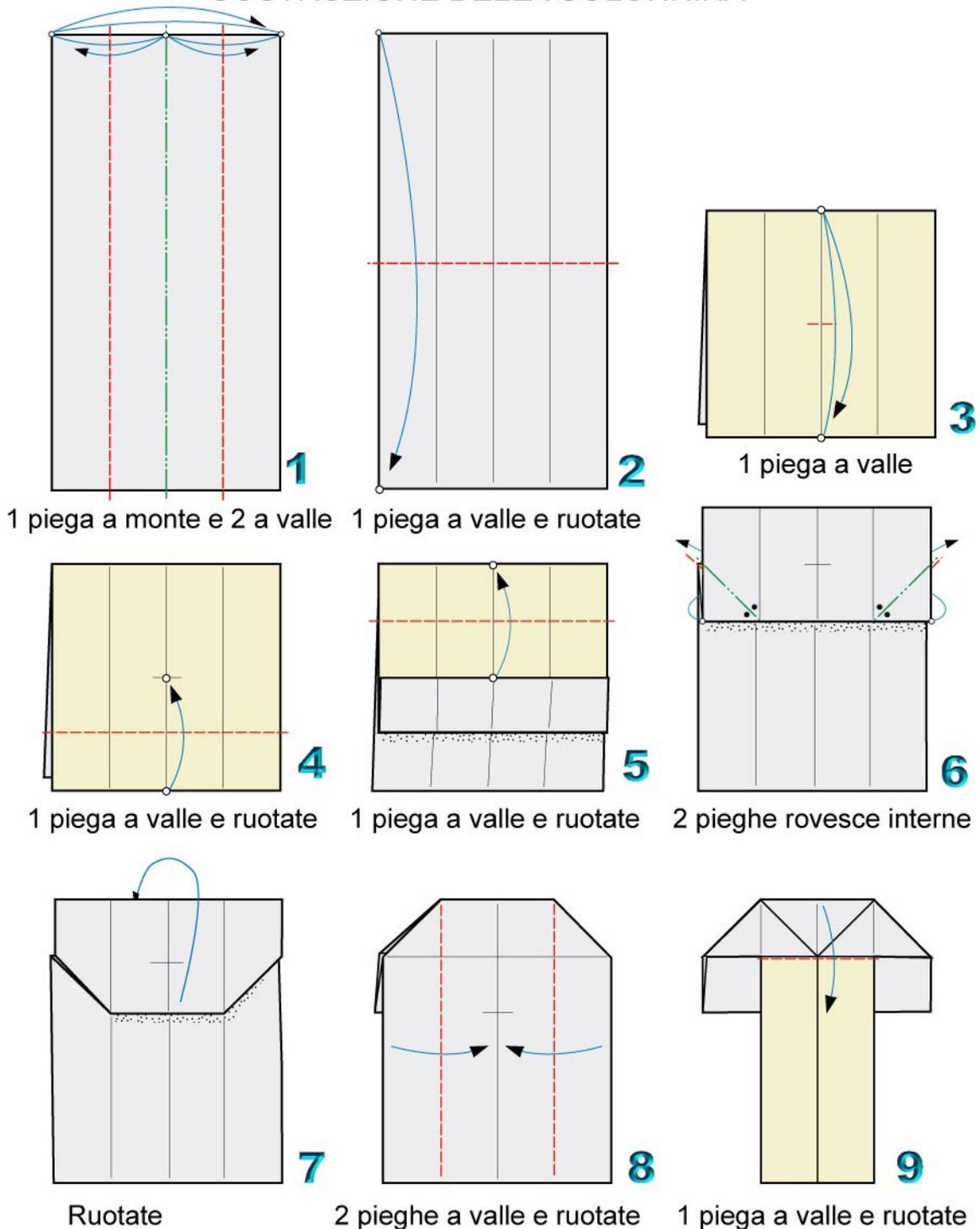
Portone montato con
inserito un ponte
levatoio

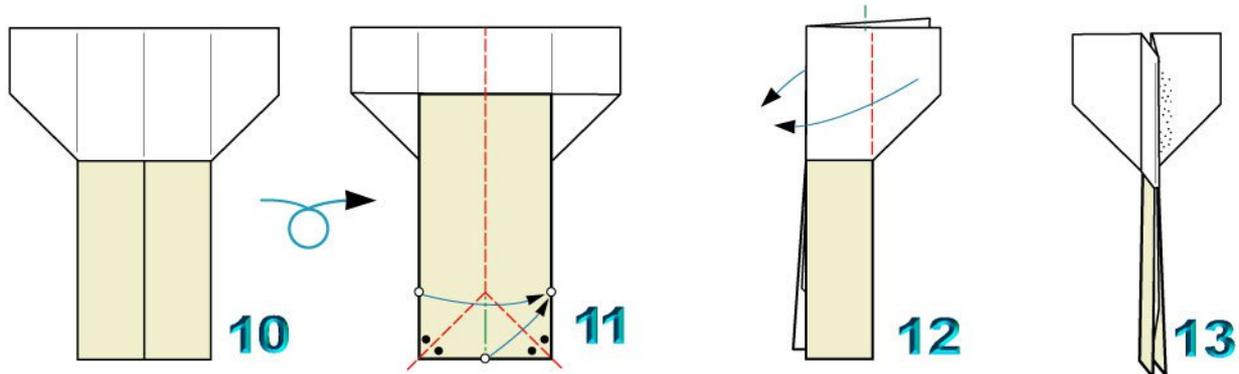
2

MULLIONED WINDOW (with two openings)

A window of a civil or religious building divided by a mullion which is a small column dividing two arc-shaped openings. Use a bicolour paper for the A3 building blocks and a light colour for the dividing column.

COSTRUZIONE DELLA COLONNINA





Ribaltate

10

2 pieghe bisettrici a valle, e ruotate ripiegando

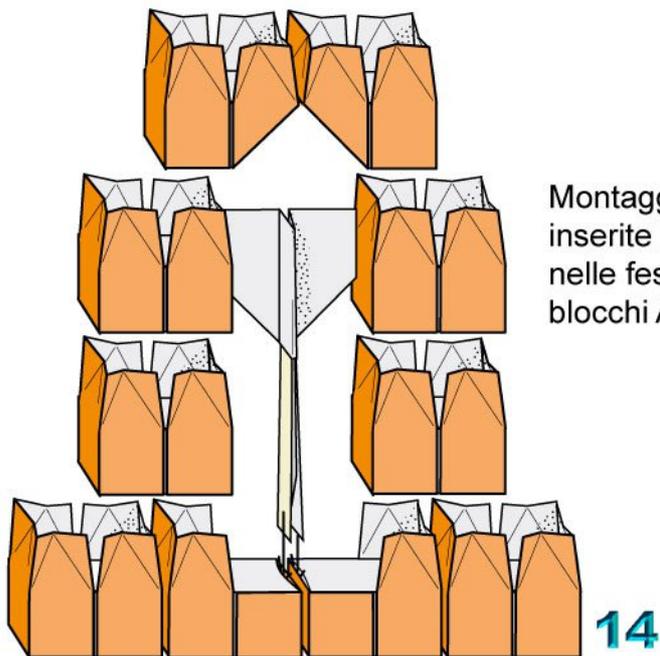
11

2 pieghe a valle, 1 per lato, e ruotate di 90°

12

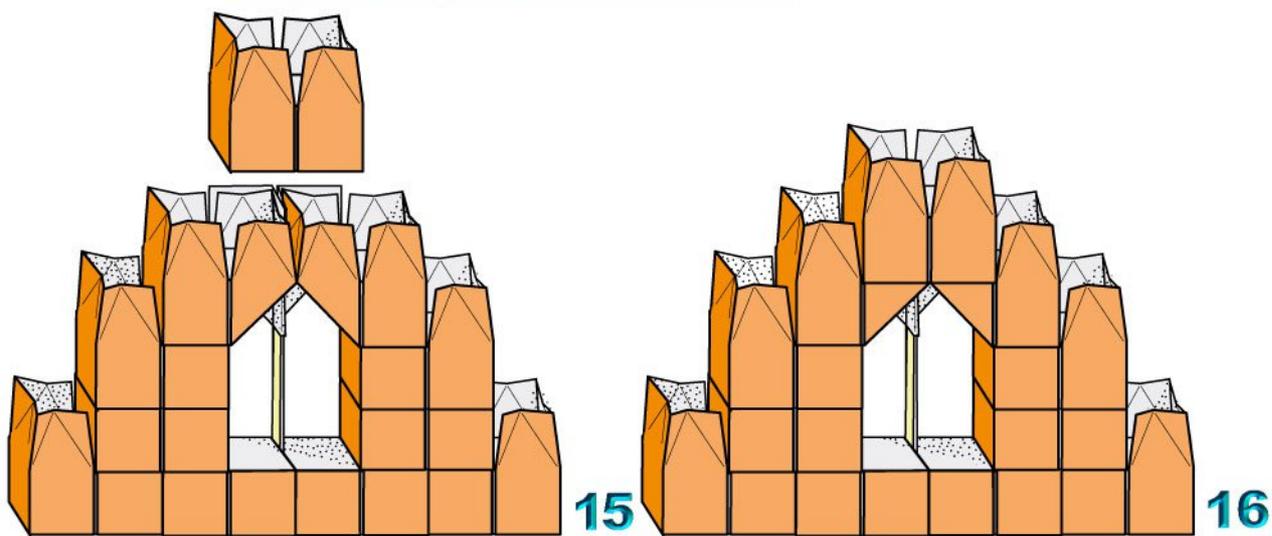
Colonnina ultimata

13



Montaggio della colonnina:
inserite le appendici inferiori
nelle fessure laterali di 2
blocchi A2

14



Bloccate il bordo superiore della colonnina inserendolo in un blocco A

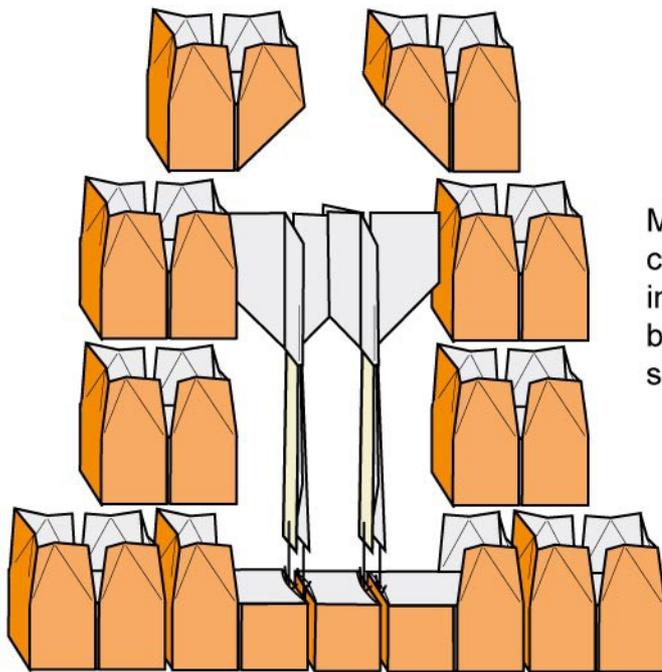
15

Bifora ultimata

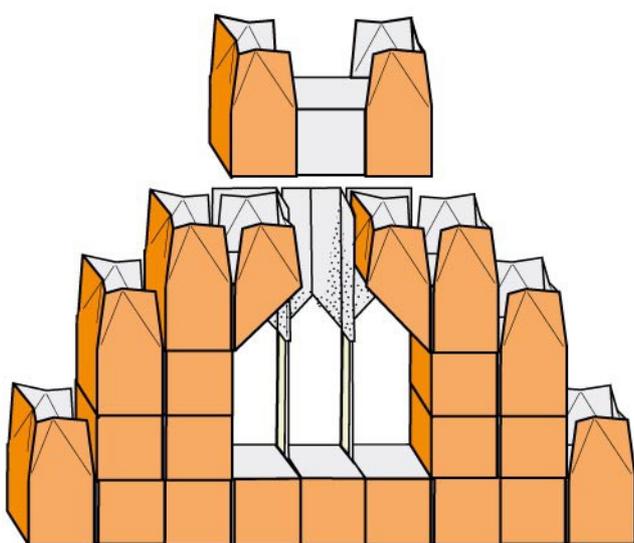
16

MULLIONED WINDOW (with three openings)

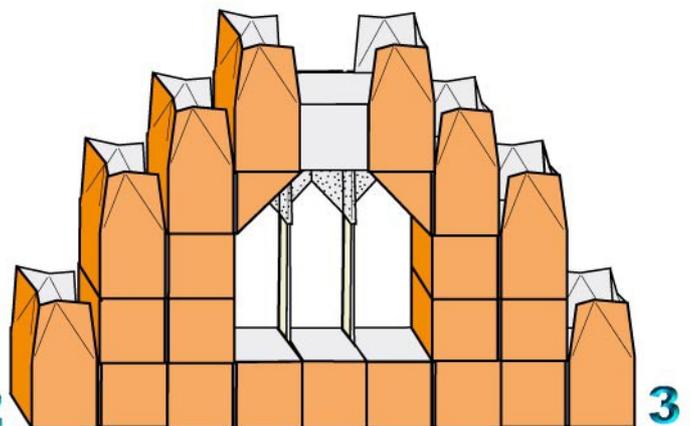
A window of a civil or religious building divided by two mullions which are small columns dividing three arc-shaped openings. Use a bicolour paper for the A3 building blocks and a light colour for the dividing columns.



Montaggio delle colonnine:
collegatele e inserite le appendici
inferiori nelle fessure laterali di 2
blocchi A2 e di un semiblocco B1
sistemato al centro



Bloccate i bordi superiori delle colonnine
inserendoli in un blocco A3

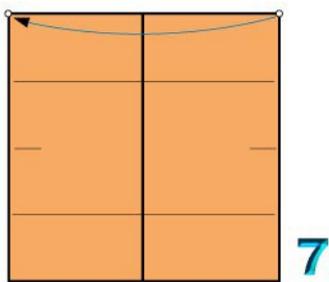


Trifora ultimata

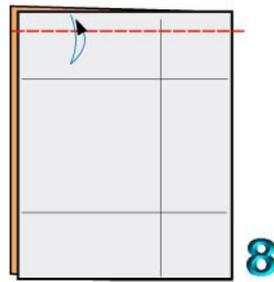
ARROW SLITS

An arrow slit is a narrow vertical aperture in a fortification through which an archer can launch arrows at the assailants.

Very important were the openings made in the towers because they allowed hitting the assailants' flanks.



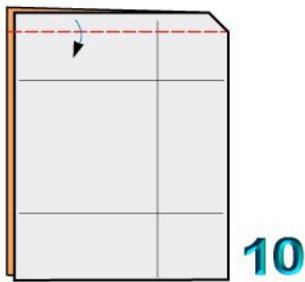
Partite dalla fig. n.6 del blocco A. Ruotate



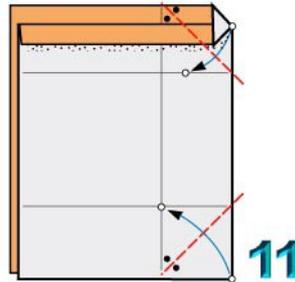
1 piega a valle



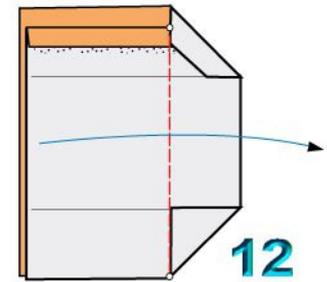
1 piega rovescia interna



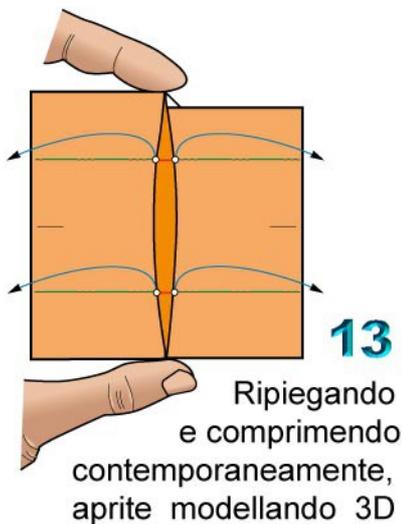
Ruotate ripiegando a valle



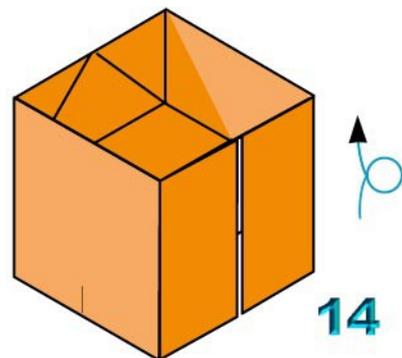
2 pieghe bisettrici a valle e ruotate



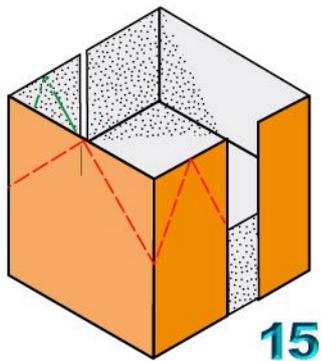
Aprite



Ripiegando e comprimendo contemporaneamente, aprite modellando 3D

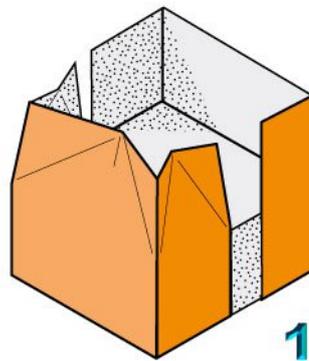


Ribaltate



15

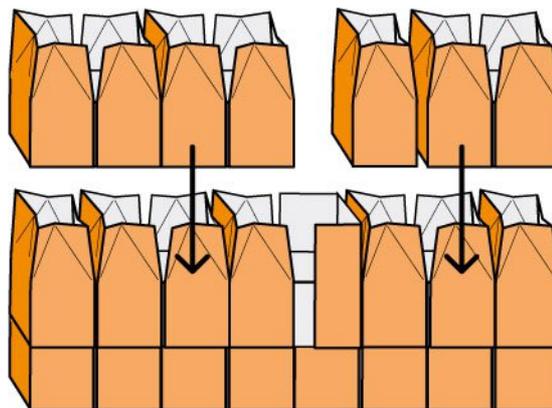
6 pieghe a valle per restringere il bordo del perimetro superiore di una parte del blocco



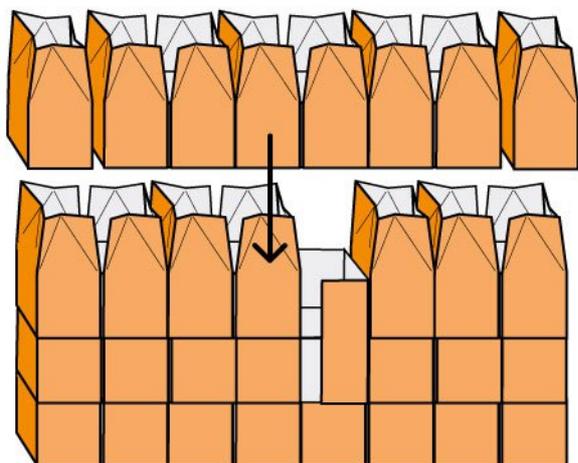
16

Blocco per feritoia ultimato

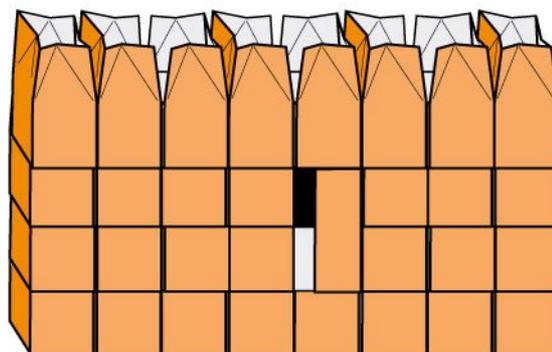
Costruzione di muratura con feritoia:
si deve lasciare uno spazio pari ad un semiblocco superiormente alla feritoia per non occluderla



1



2



3

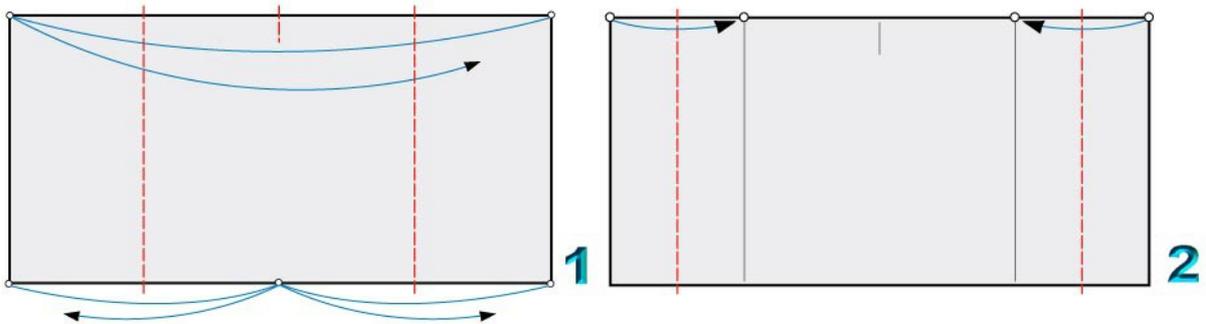
ESEMPIO DI MURATURA CON FERITOIA

BARTIZAN

A bartizan is a cantilevered wooden structure provided with machilocations, located at the top of a rampart or erected to protect an entrance door. Bartizans could be installed in anticipation of a siege and covered with wet skins to make it flame resistant. In later periods they were made of brick.

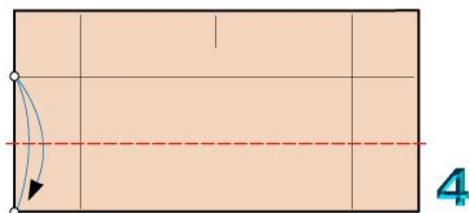
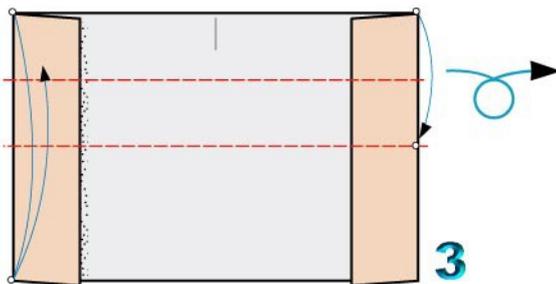
It is a very elaborate assemblage and is made with 2 rectangular sheets, 1 for the base and the other for the top.

COSTRUZIONE DELLA BASE



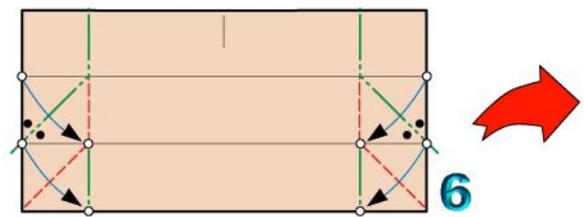
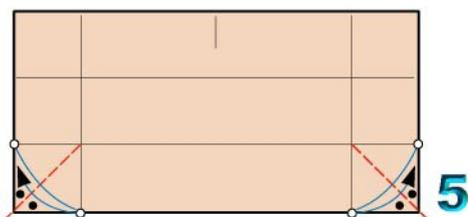
Eseguite prima le 2 piccole pieghe a valle centrali e poi le altre 2 trasversali

2 pieghe a valle e ruotate



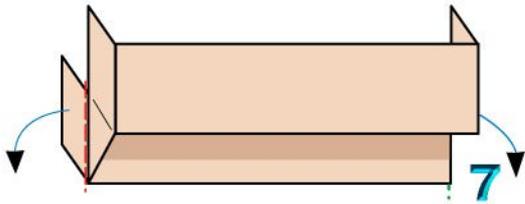
2 pieghe a valle, ruotate e ribaltate

1 piega a valle e ruotate

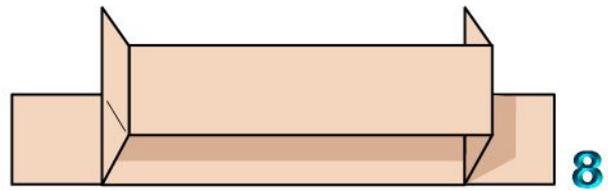


2 pieghe bisettrici a valle

2 pieghe bisettrici a monte e ripiegando a valle ed a monte modellate 3D

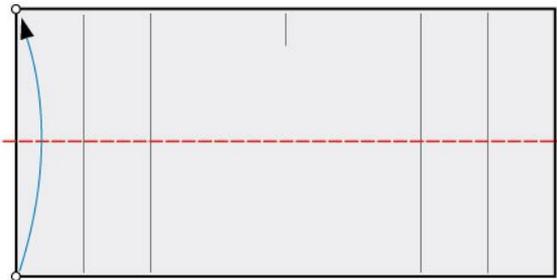


2 pieghe a valle e ruotate le appendici laterali



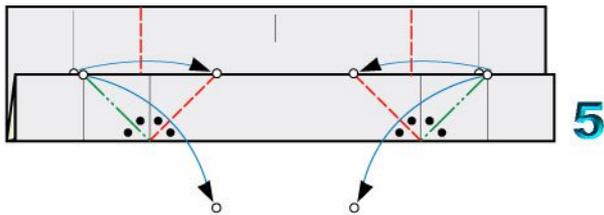
base di bertesca ultimata

COSTRUZIONE DELLA COPERTURA

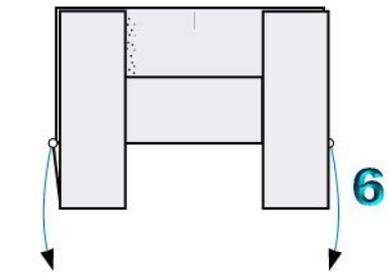
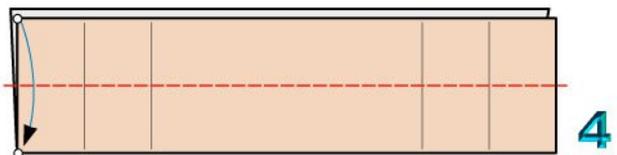


3 1 piega a valle solo sulla superficie in vista e ruotate

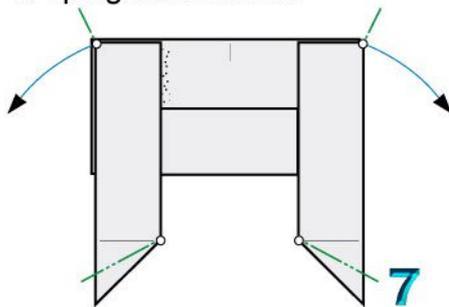
Partite dalla fig. n. 2 della base di bertesca, 1 piega a valle e ruotate



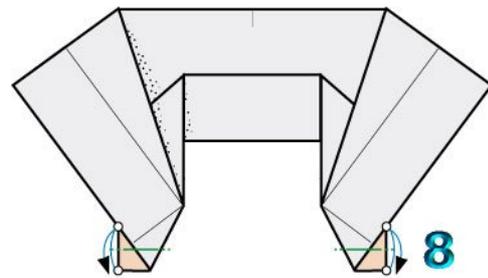
5 2 pieghe a valle, 2 a monte, e ripiegando ruotate



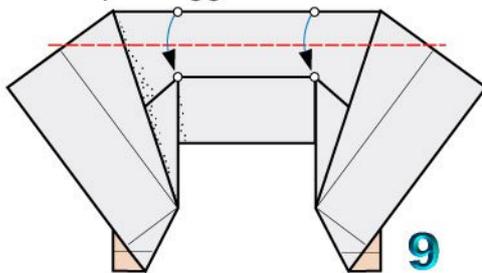
6 Estraiete i vertici indicati



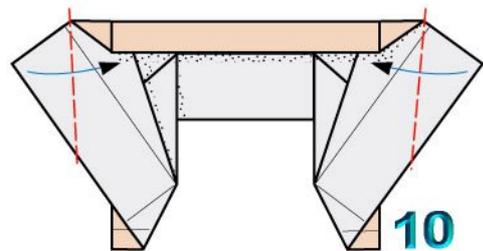
7 Estraiete le superfici visibili nel passaggio successivo



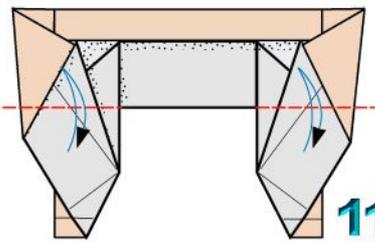
8 2 pieghe a monte



9 1 piega a valle e ruotate

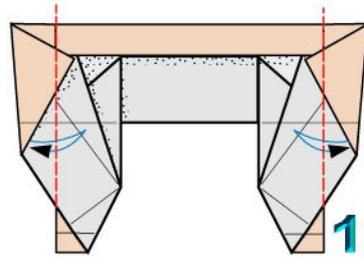


10 2 pieghe a valle e ruotate



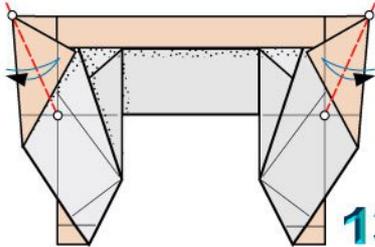
11

2 pieghe a valle



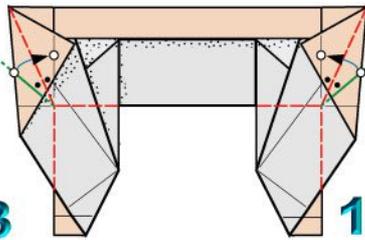
12

2 pieghe a valle



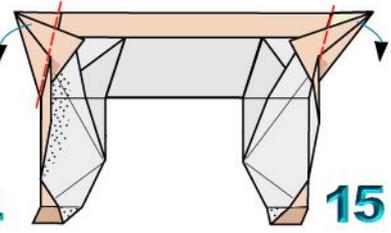
13

2 pieghe a valle



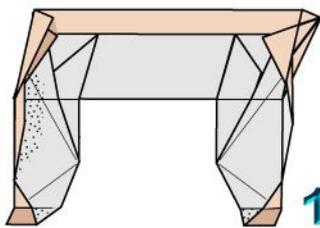
14

2 pieghe bisettrici a monte e, ripiegando a valle, ruotate 3D



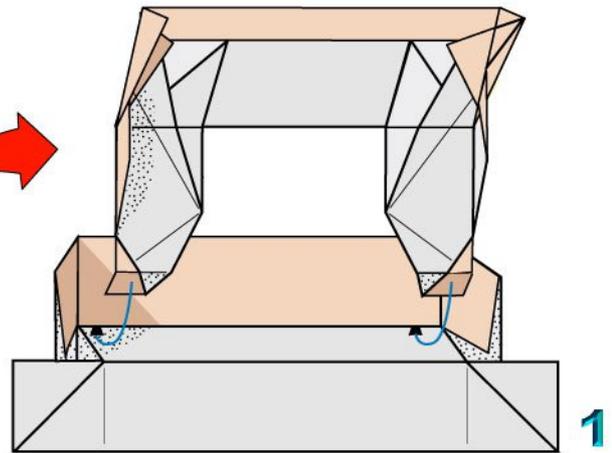
15

2 pieghe a valle e ruotate



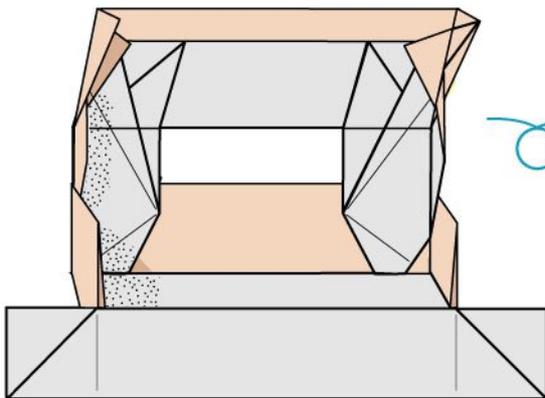
16

Copertura di bertesca ultimata



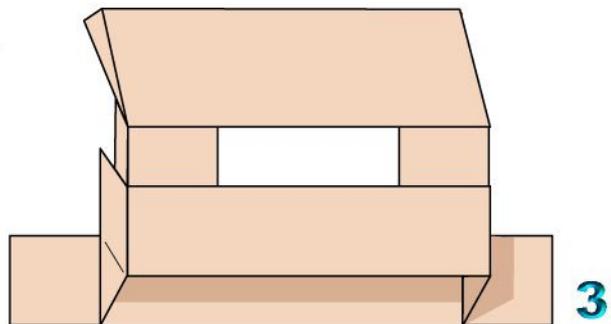
1

Montaggio di bertesca: intascate i bordi inferiori della copertura nella tasca della base indicata



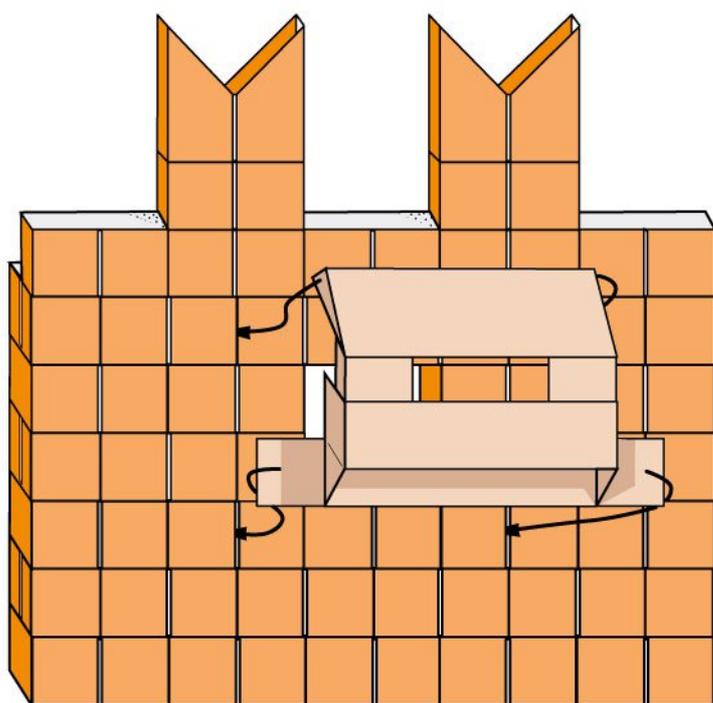
2

Ribaltate



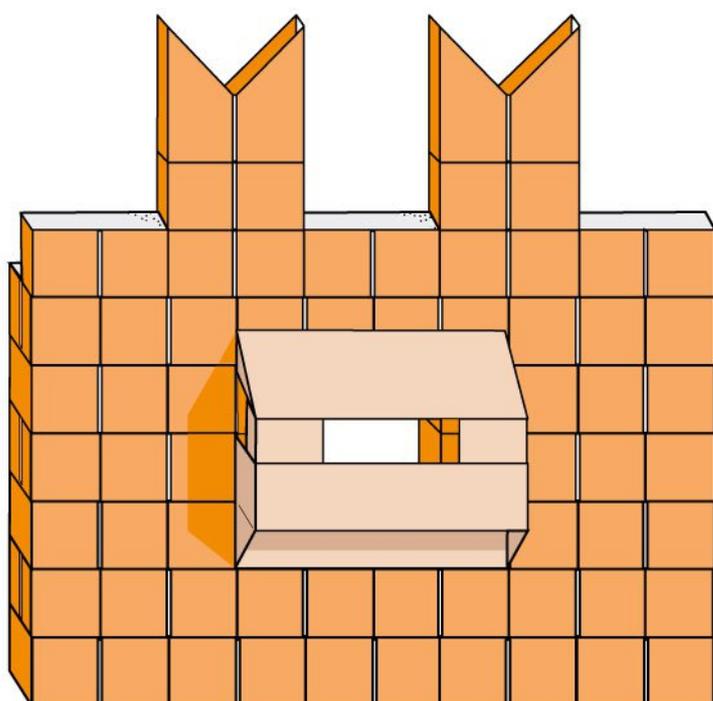
3

Bertesca ultimata



Montaggio della bertesca sulla parete: inserite le sue appendici laterali nelle fessure centrali di 2 blocchi A

4



BERTESCA ULTIMATA

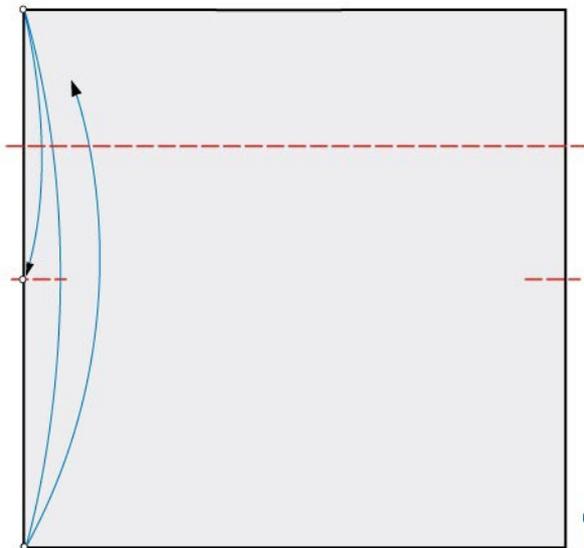
5

KEEP

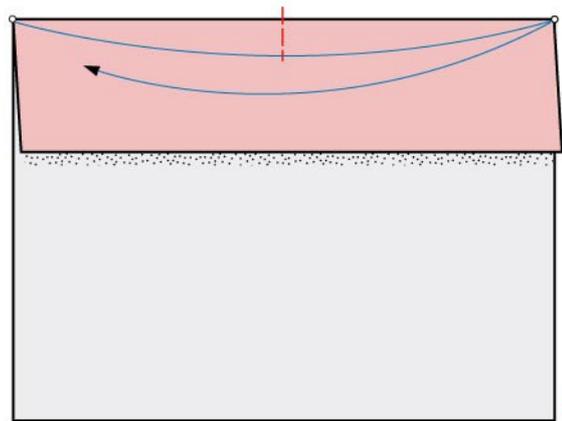
It is the castle tower whose main characteristic is that it is the highest and most solid construction compared to the other towers. In most cases, its protected entry is elevated above the floor.

4 square papers are needed to build the roof that rests on the 4 pillars made from modified A blocks.

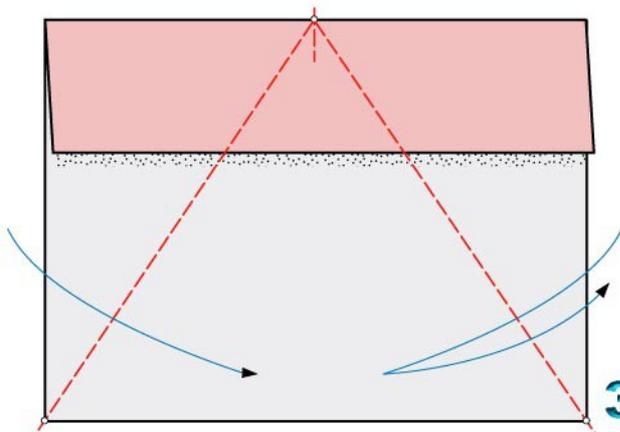
COSTRUZIONE DELLA COPERTURA



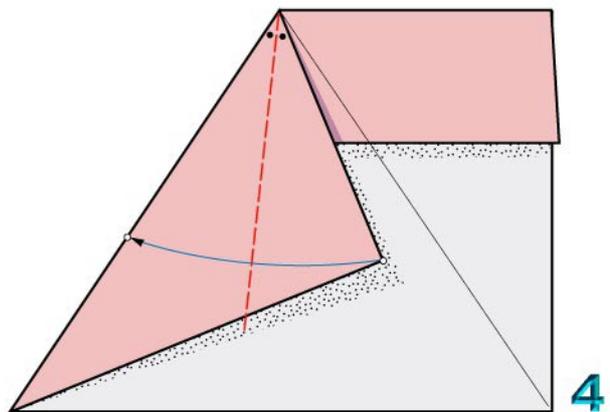
3 pieghe a valle, 2 piccole e ruotate



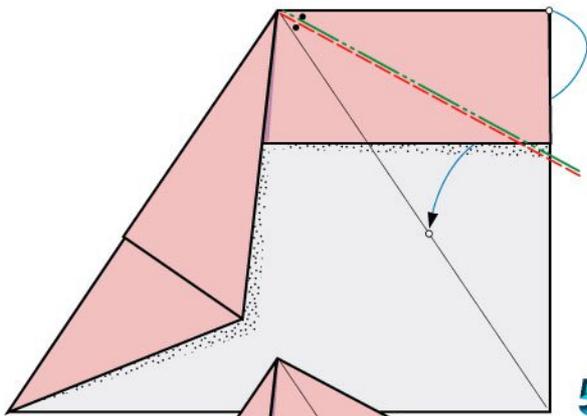
1 piccola piega a valle



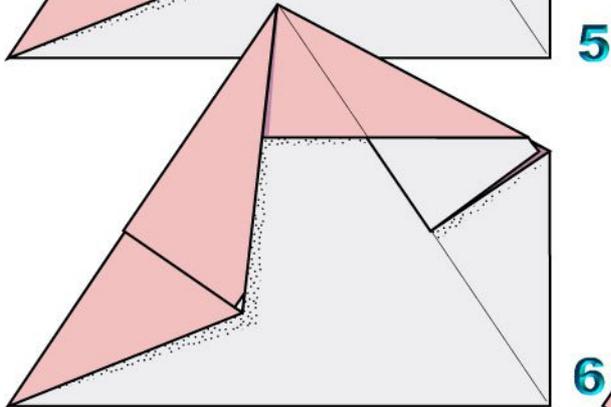
2 pieghe a valle, e ruotate la superficie sinistra



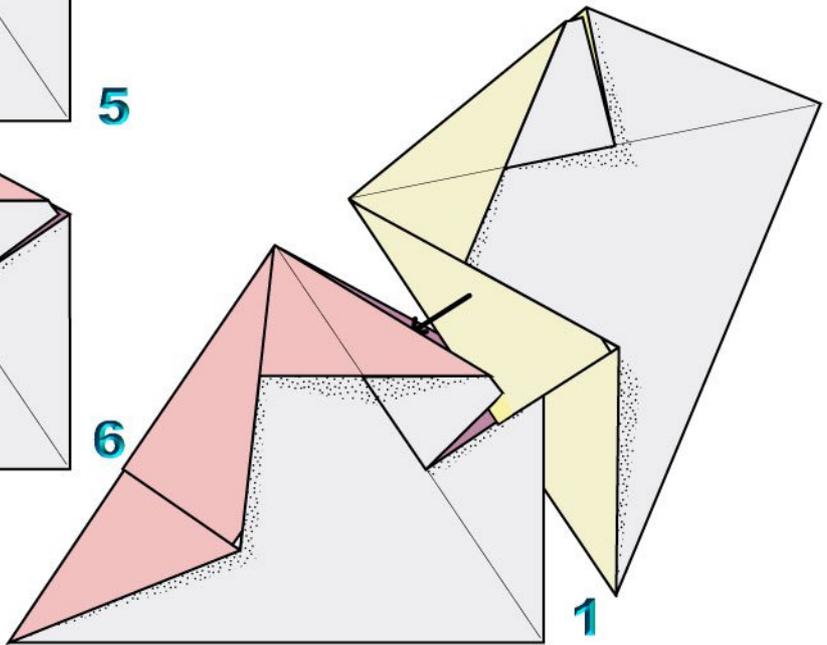
1 piega bisettrice a valle e ruotate



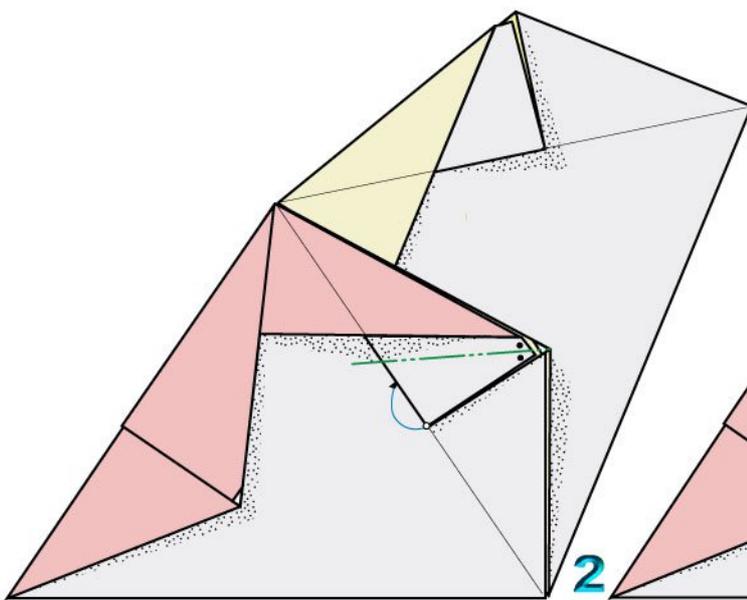
Eseguite 1 piega rovescia interna



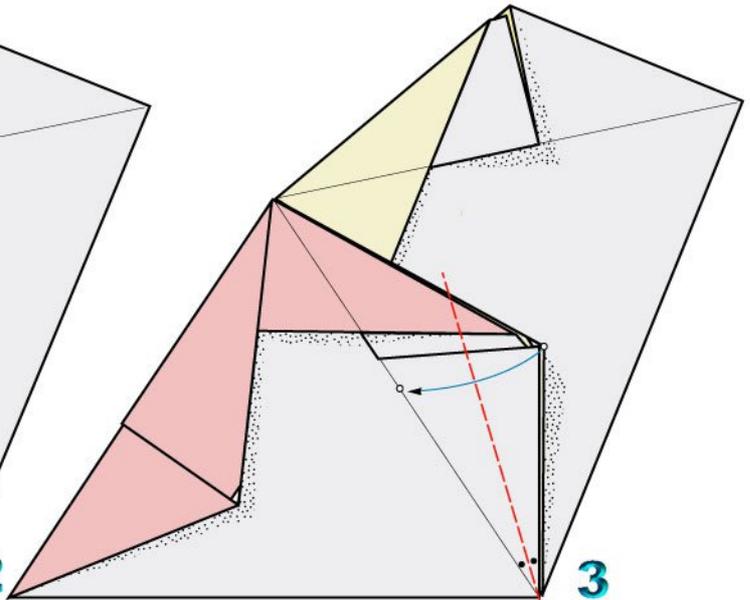
Modulo ultimato



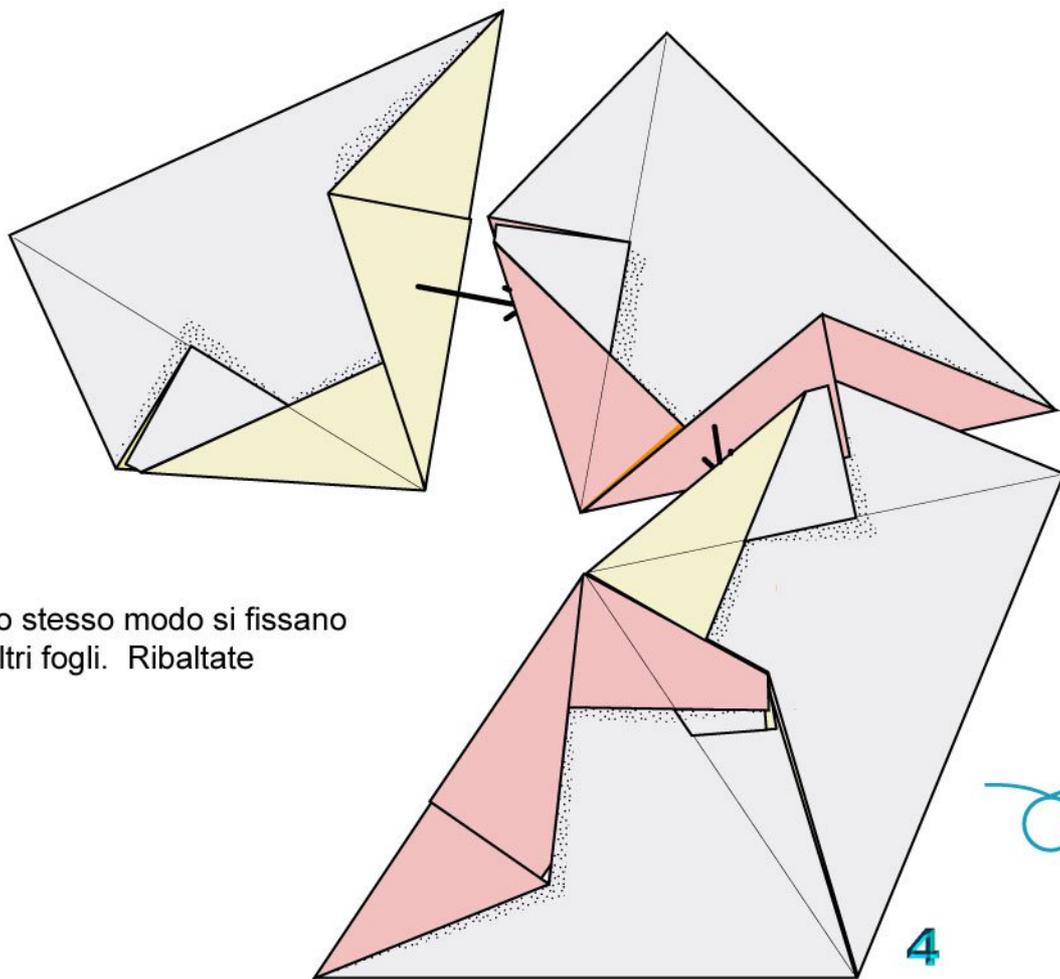
Unione di due moduli: inserite l'aletta di uno entro la tasca di un'altro



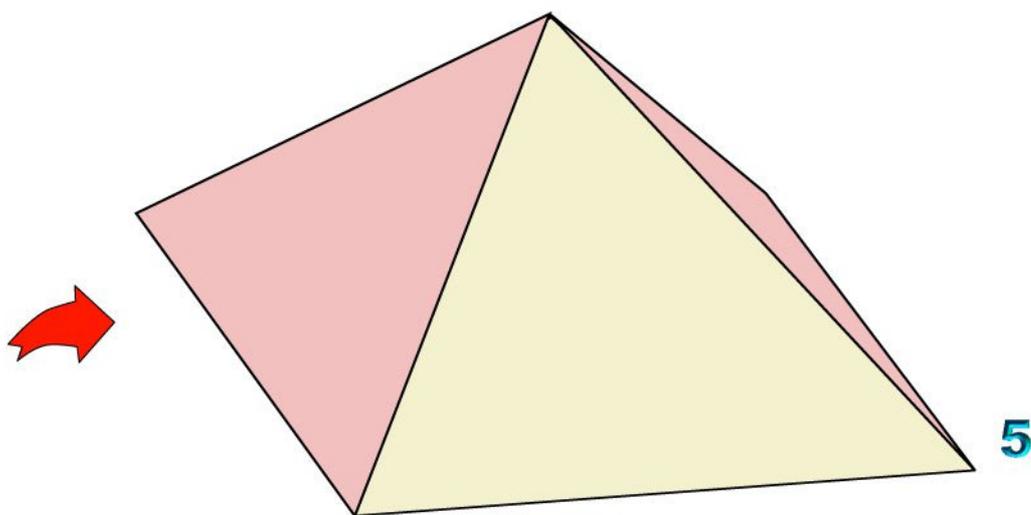
1 piega bisettrice a monte e ruotate per bloccare l'unione



1 piega bisettrice a valle e ruotate bloccando l'unione

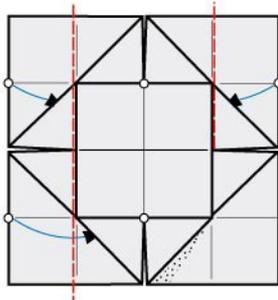


Nello stesso modo si fissano gli altri fogli. Ribaltate



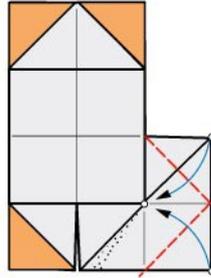
COPERTURA DI MASTIO ULTIMATA

COSTRUZIONE DEI PILASTRI D'APPOGGIO DELLA COPERTURA



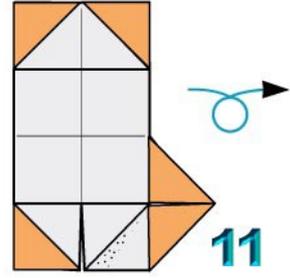
9

Partite dalla fig. n. 8 del modulo A4. 3 pieghe a valle e ruotate intascando



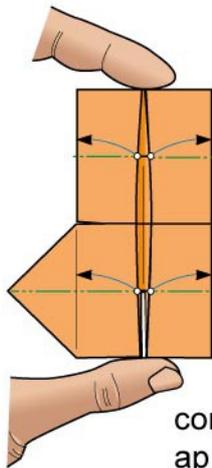
10

2 pieghe a valle e ruotate



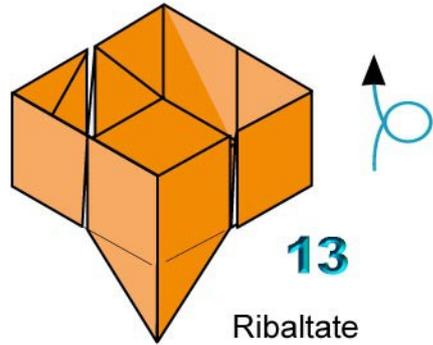
11

Ribaltate



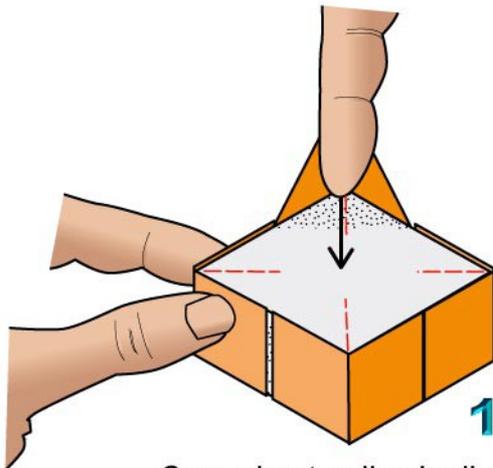
12

Ripiegando e comprimendo contemporaneamente, aprite modellando 3D



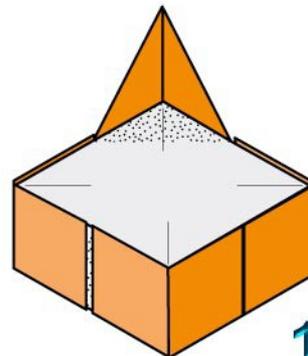
13

Ribaltate



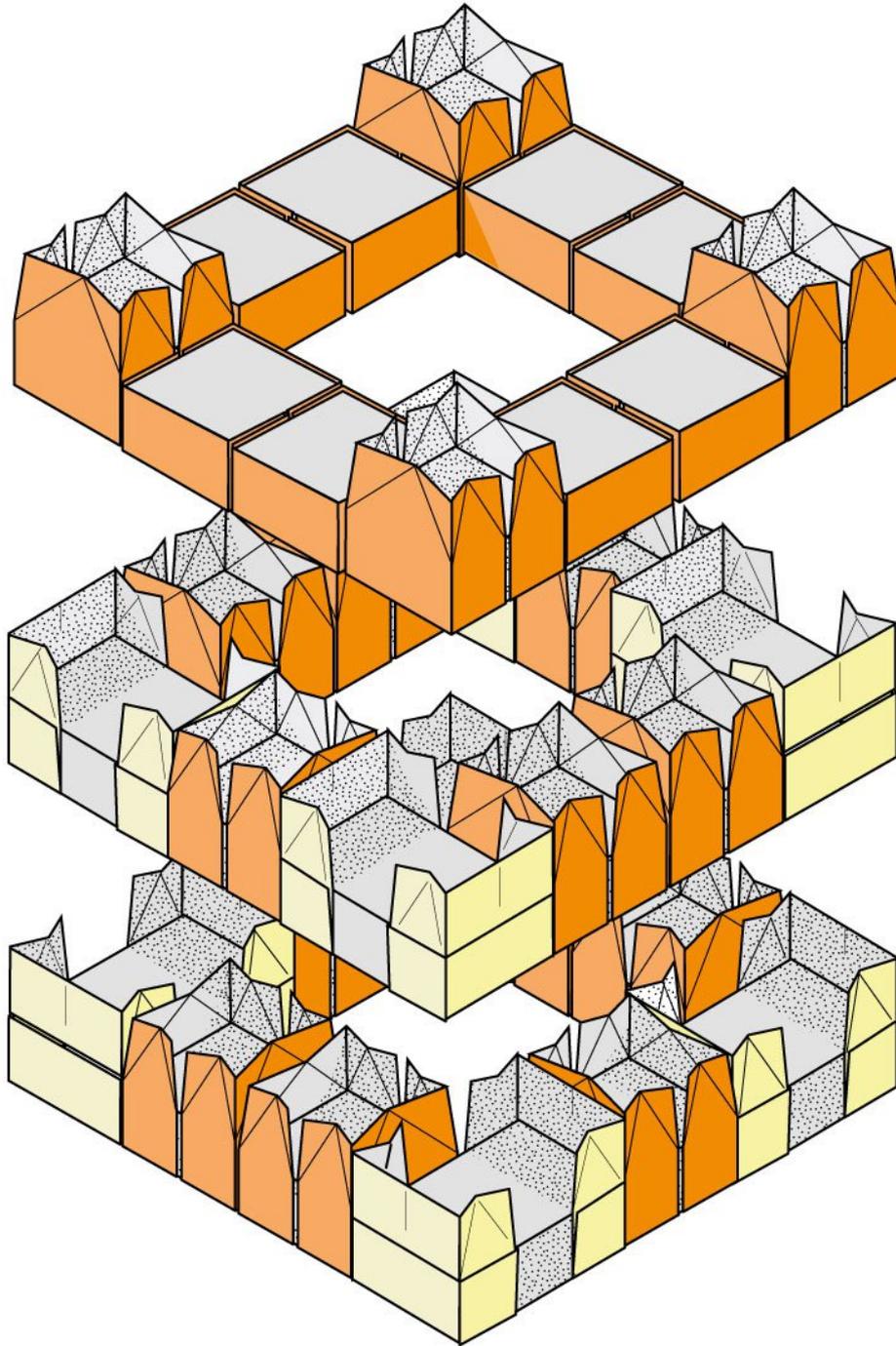
14

Comprimete gli spigoli e fate rientrare leggermente il fondo

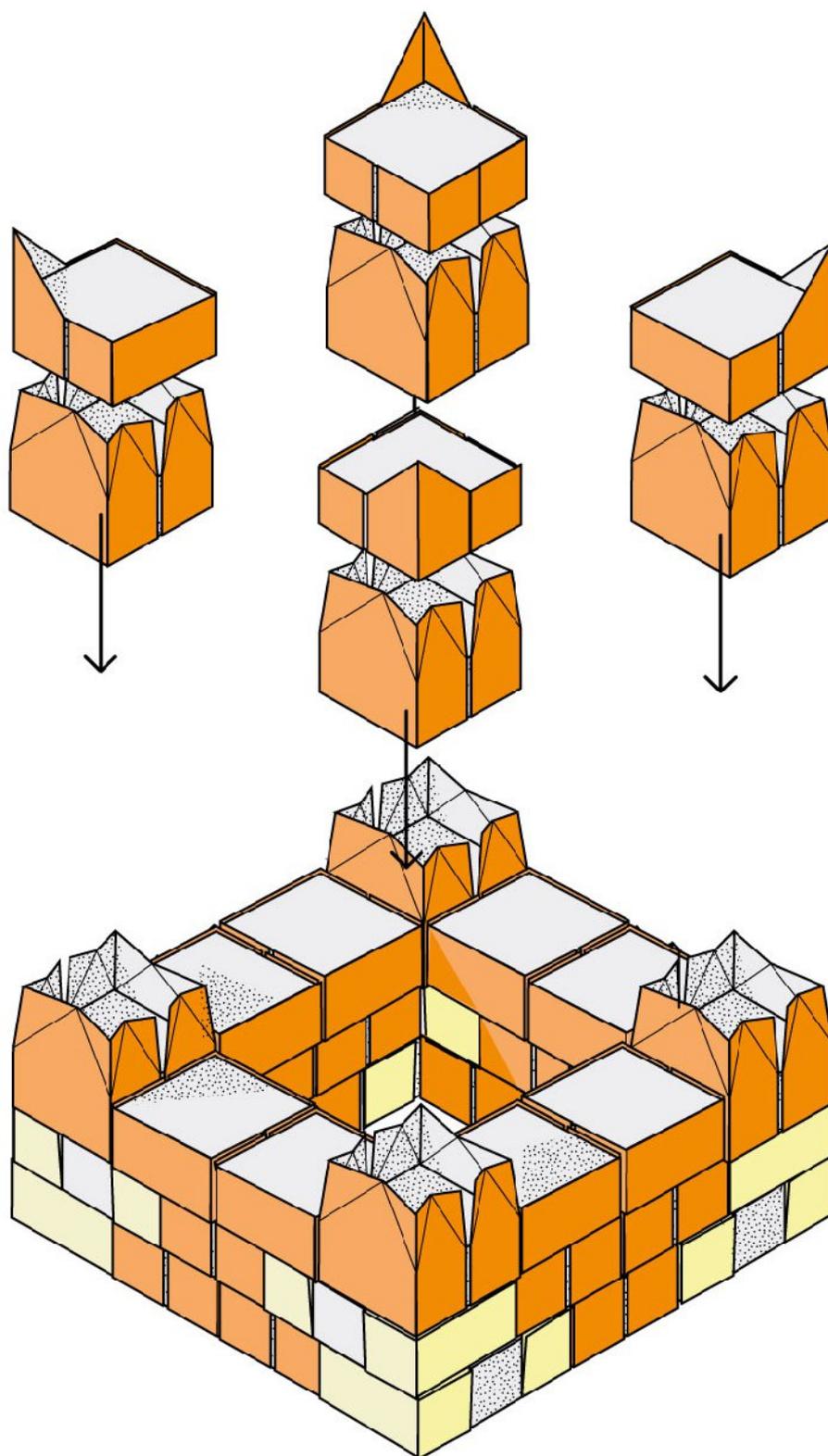


15

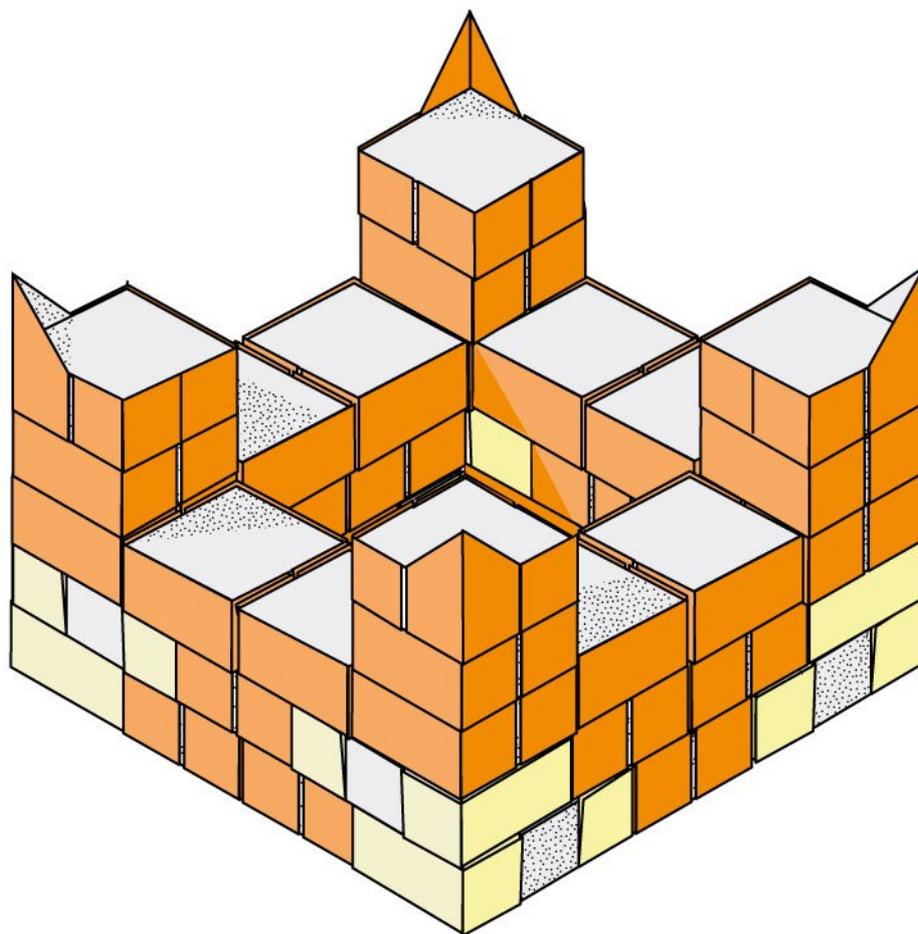
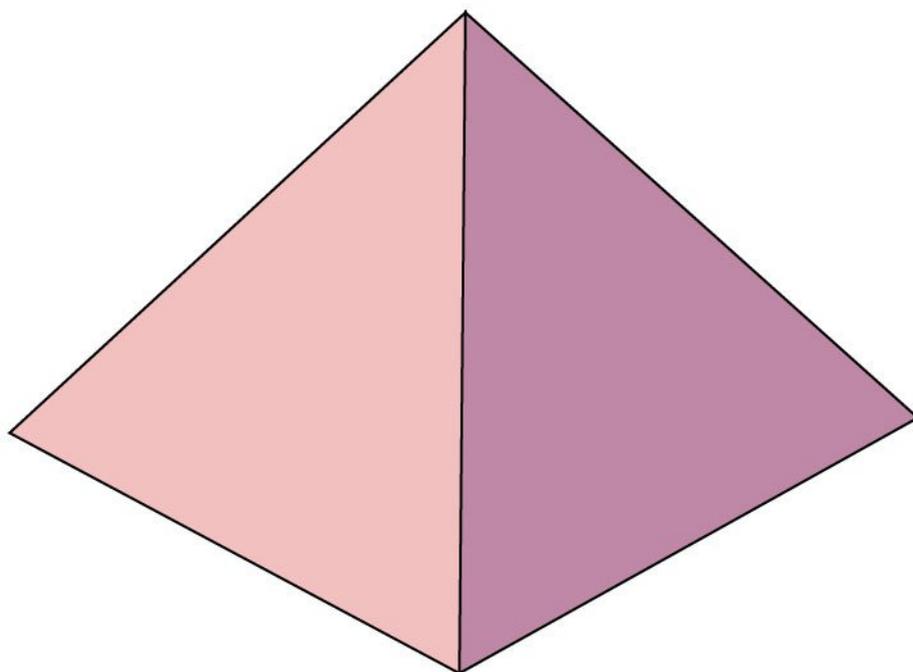
Pilastro d'appoggio della copertura ultimato



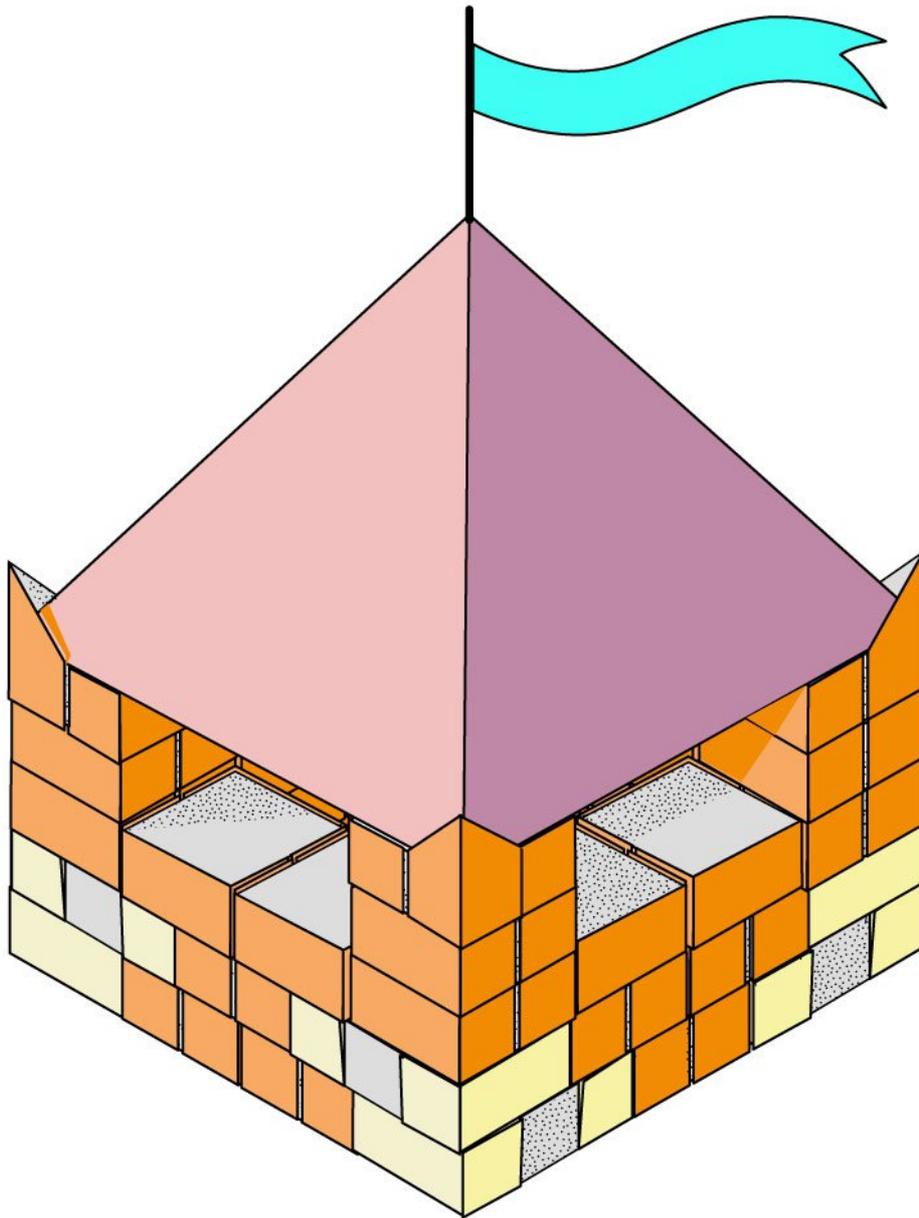
Costruzione della torre



Montaggio dei pilastri d'appoggio della copertura



Montaggio della copertura sui pilastri d'appoggio

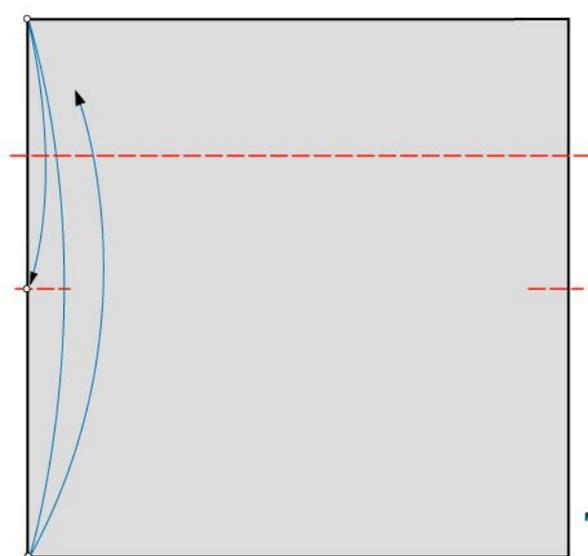


MASTIO COMPLETATO

BELL TOWER

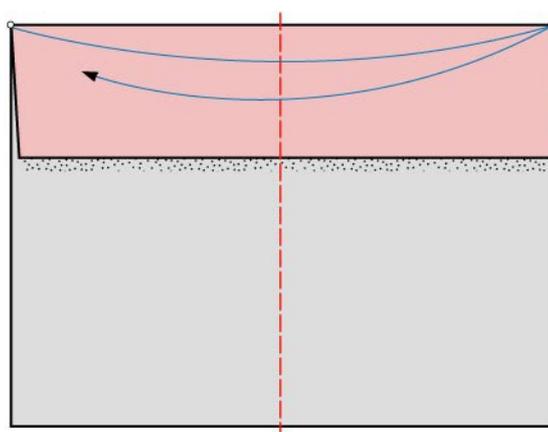
Two square sheets of paper are necessary to build the roof which will rest on four pillars made with modified B blocks.

COSTRUZIONE DELLA COPERTURA



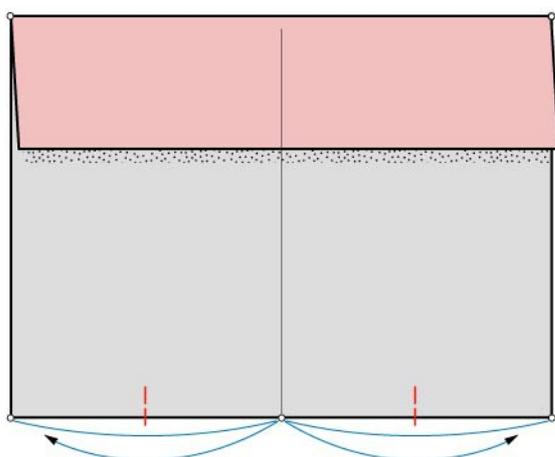
1

3 pieghe a valle, 2 piccole e ruotate



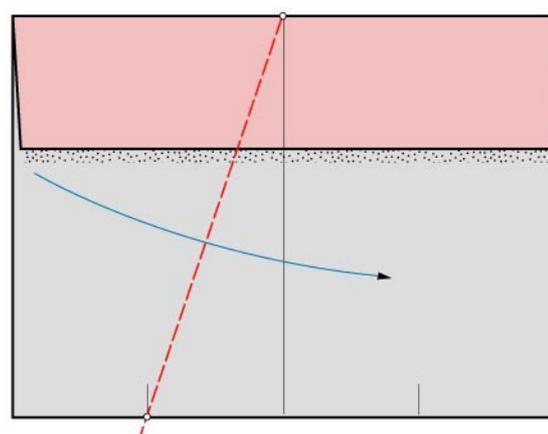
2

1 piega a valle



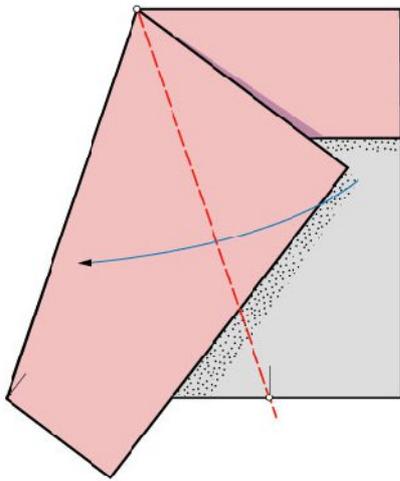
3

2 piccole pieghe a valle



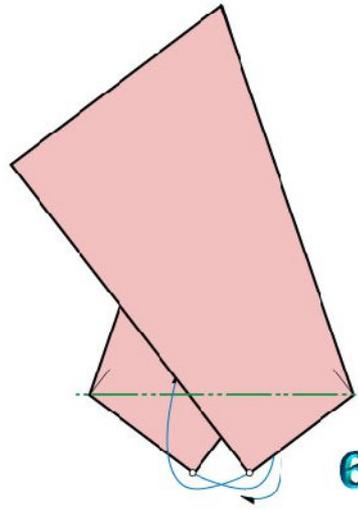
4

1 piega a valle e ruotate



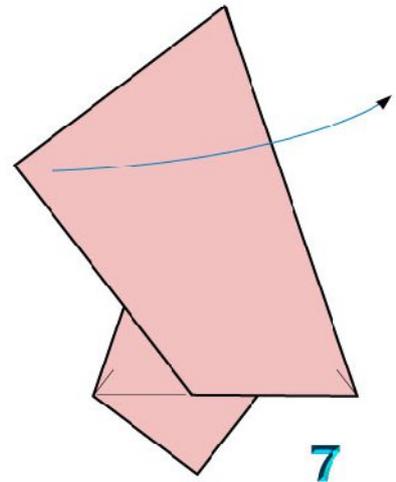
5

1 piega a valle e ruotate



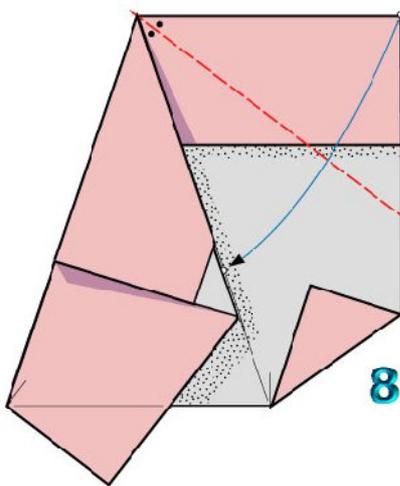
6

1 piega a monte e ruotate
il vertice destro



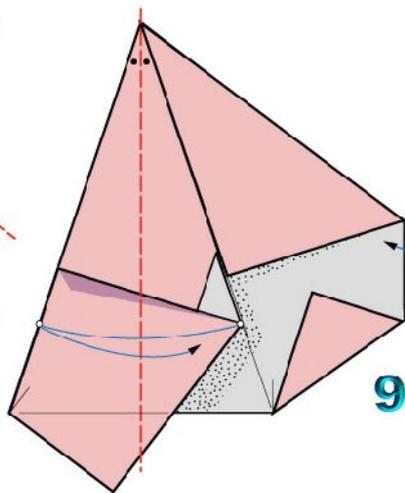
7

Aprite



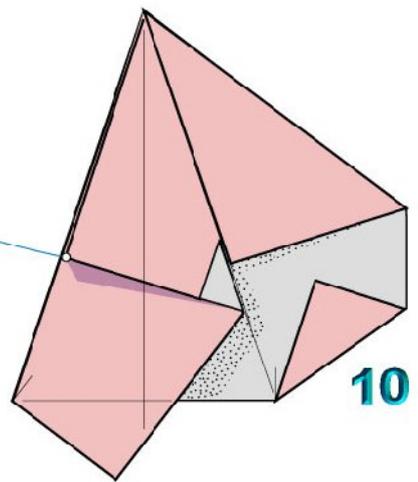
8

1 piega bisettrice a
valle e ruotate



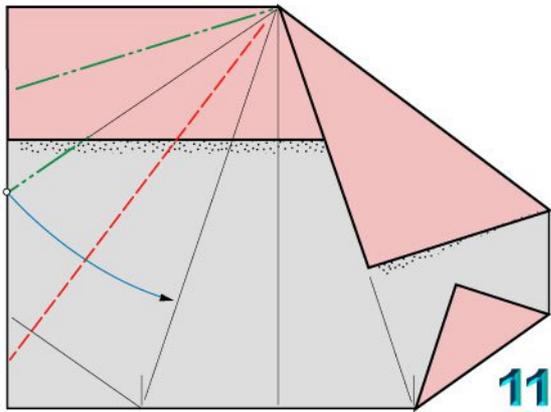
9

1 piega bisettrice a
valle



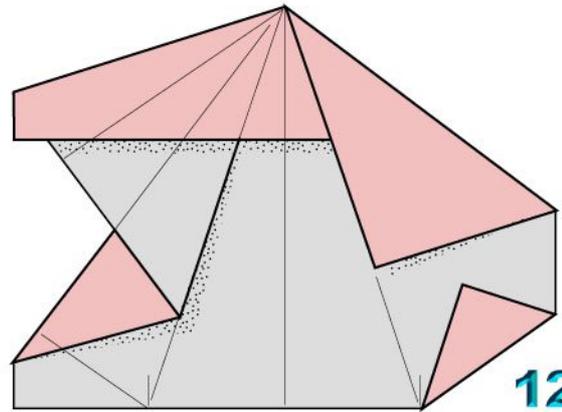
10

Aprite



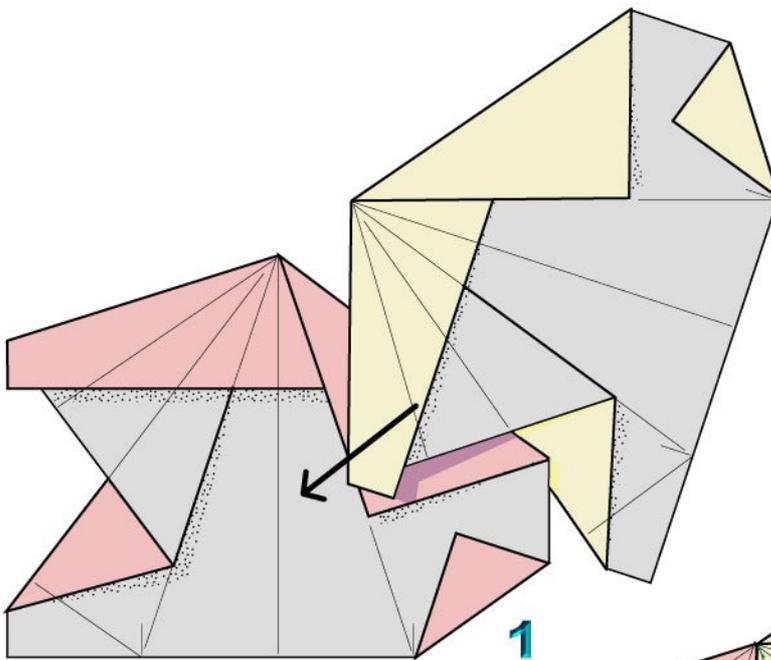
11

Ruotate ripiegando a valle ed a monte



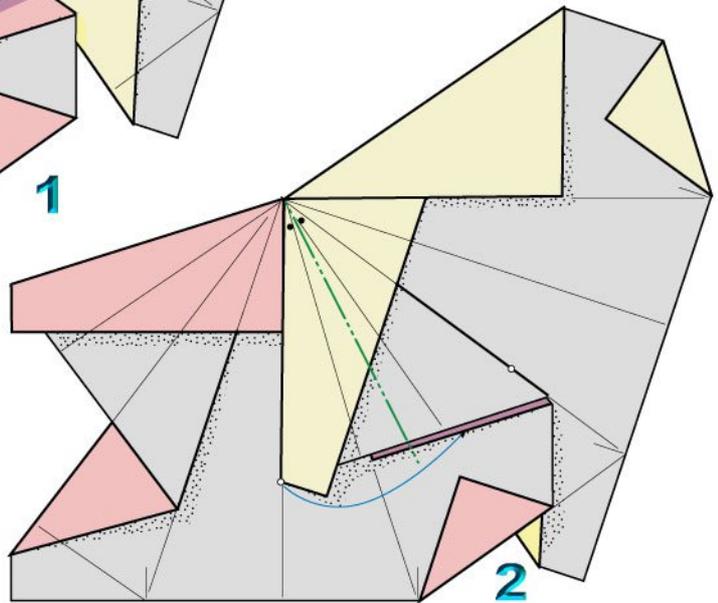
12

Modulo ultimato



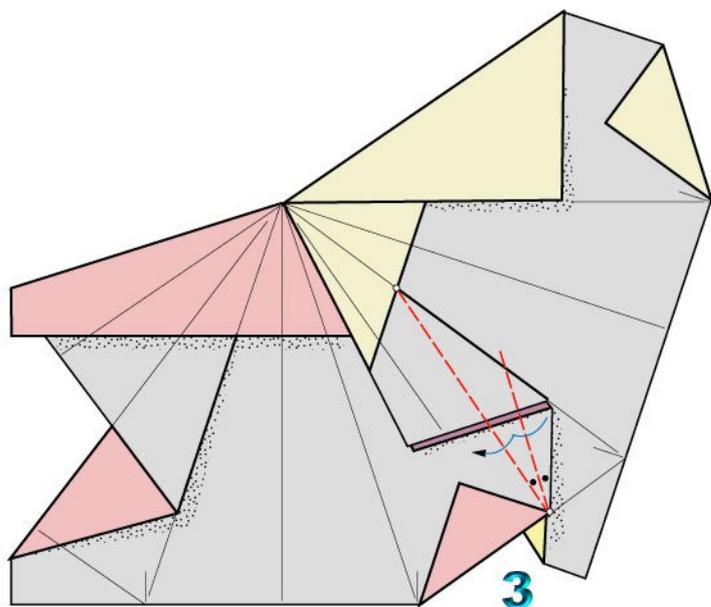
1

Montaggio dei 2 moduli:
inserite un modulo nell'altro

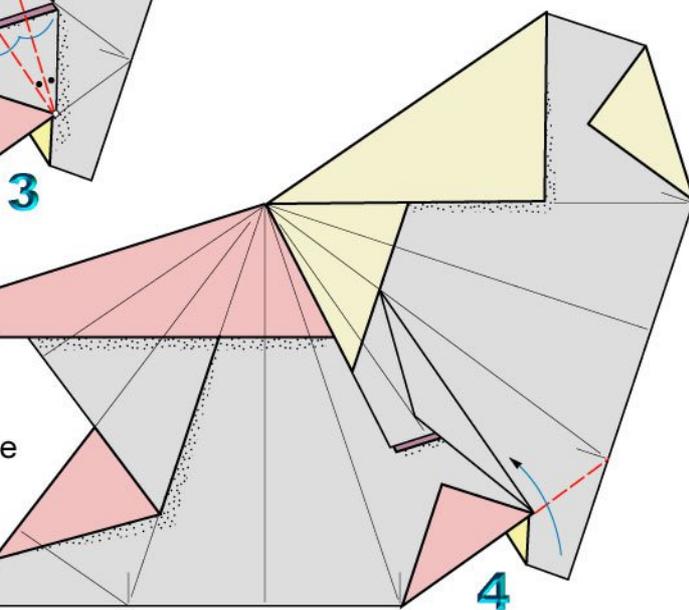


2

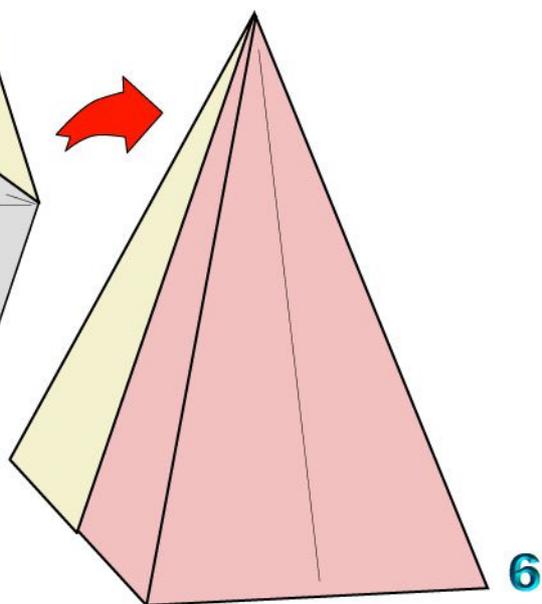
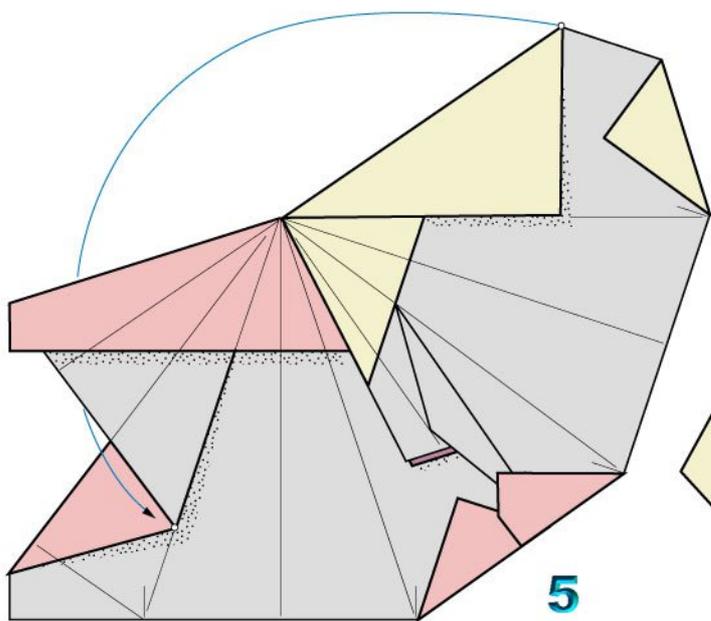
1 piega bisettrice a monte e ruotate



2 pieghe a valle e ruotate per bloccare il tutto



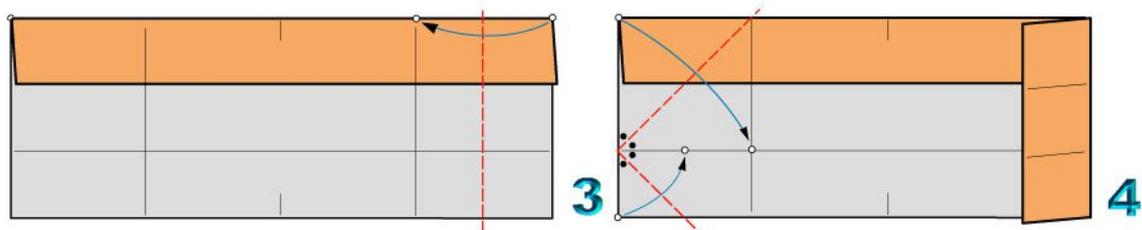
1 piega a valle e ruotate



Ripetete l'operazione per chiudere la piramide

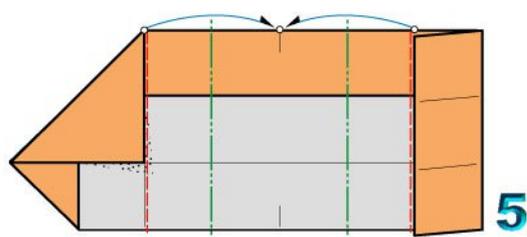
Copertura ultimata

COSTRUZIONE DEI PILASTRI D'APPOGGIO DELLA COPERTURA

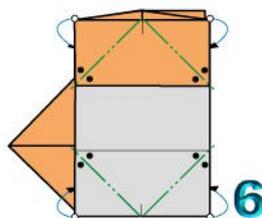


Partite dalla fig.n.2 del semiblocco B.
1 piega a valle e ruotate

2 pieghe bisettrici a valle e ruotate



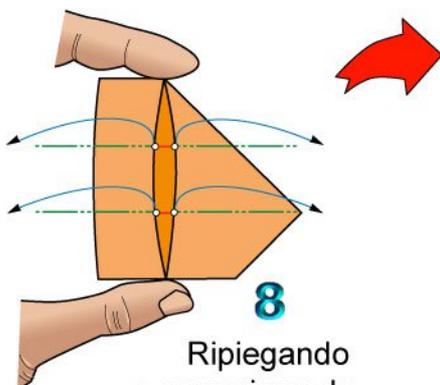
2 pieghe a monte e ruotate
ripiegando a valle



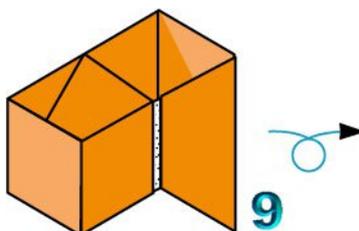
4 pieghe bisettrici a
monte e ruotate all'interno



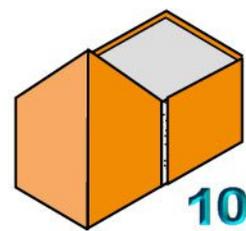
Ribaltate



Ripiegando
e comprimendo
contemporaneamente,
aprite modellando 3D

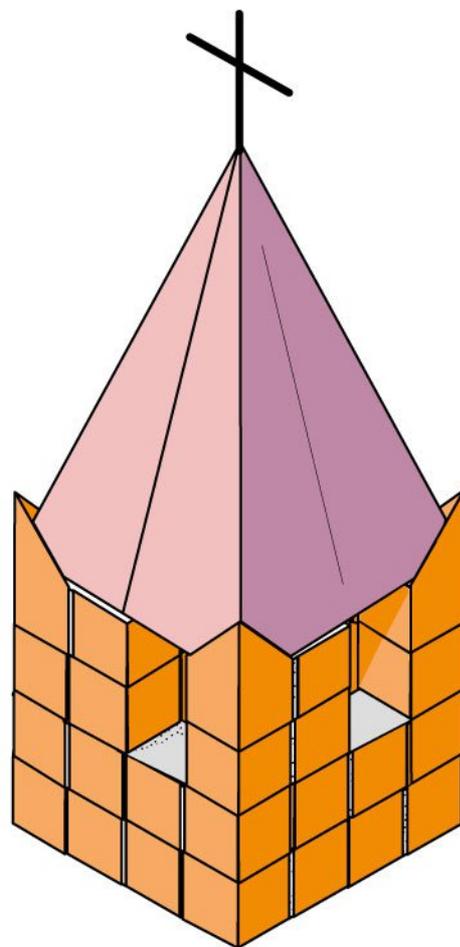
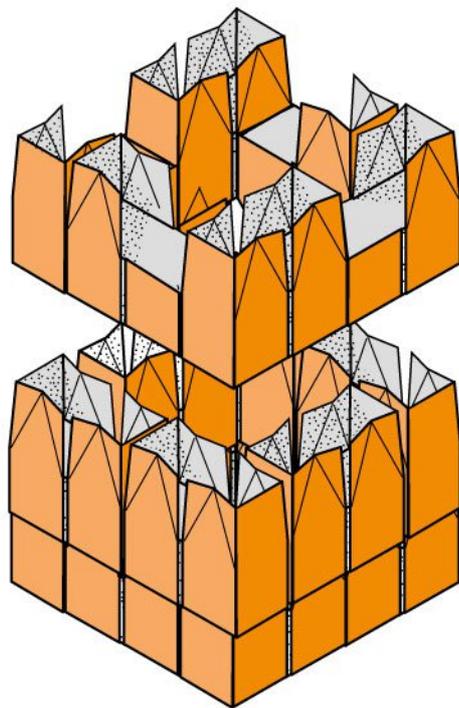
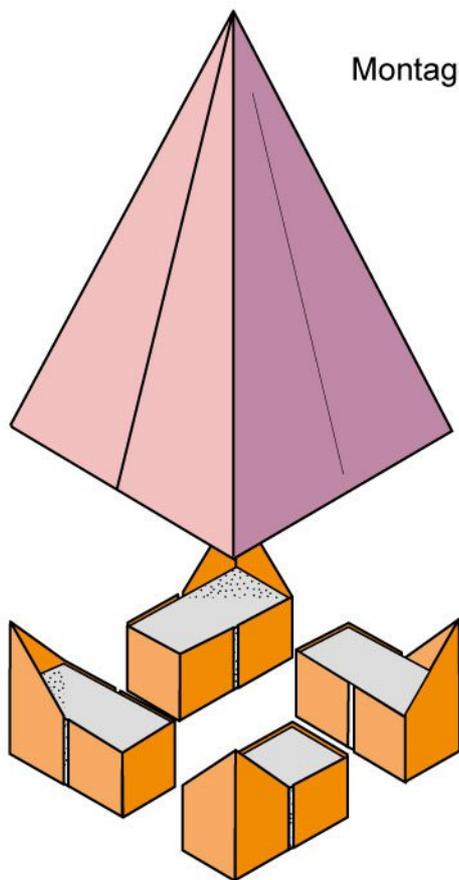


Ribaltate



Pilastro d'appoggio
ultimato

Montaggio del campanile



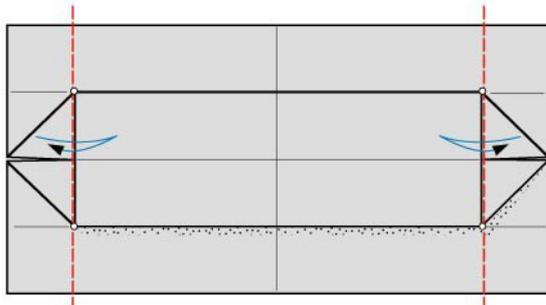
CAMPANILE ULTIMATO

PORCH PORTAL (PROTHYRUM)

It is a small porch with a V-shaped roof. Its function was to protect the main entrance of medieval churches. It is supported by side walls or columns at the base of which animals or fantastic monsters are carved.

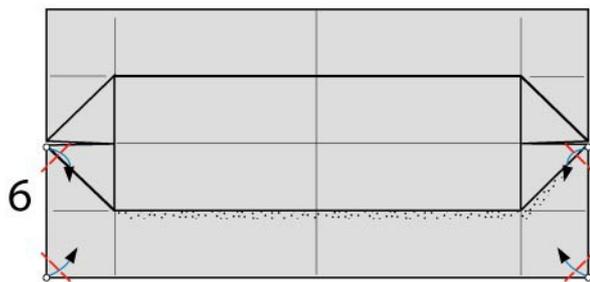
This is done by laying the roof on top of two lateral walls.

COSTRUZIONE DEL TETTO



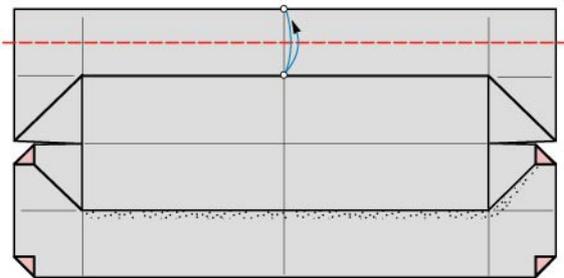
Partite dalla fig. n. 5 del blocco A4.
2 pieghe a valle

6



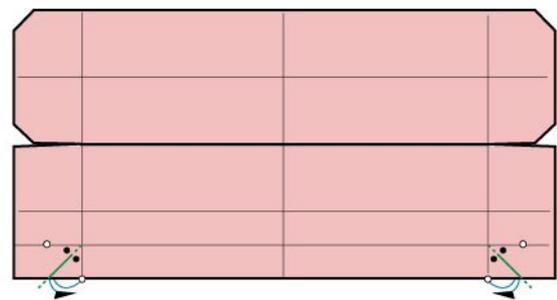
4 piccole pieghe a valle e ruotate

7



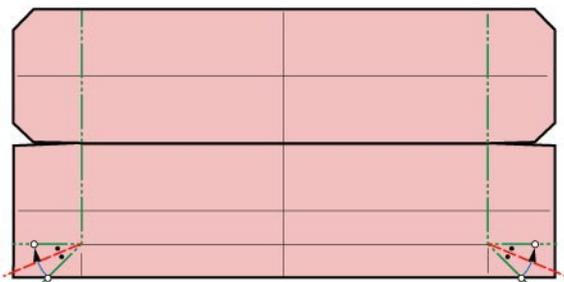
1 piega a valle e ribaltate

8



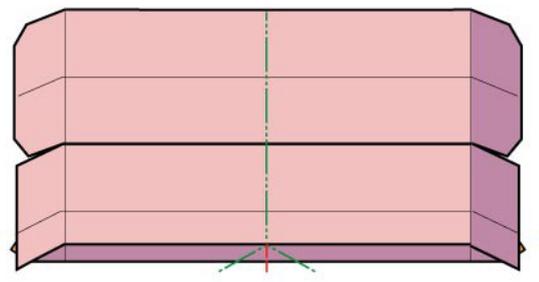
2 pieghe bisettrici a monte

9



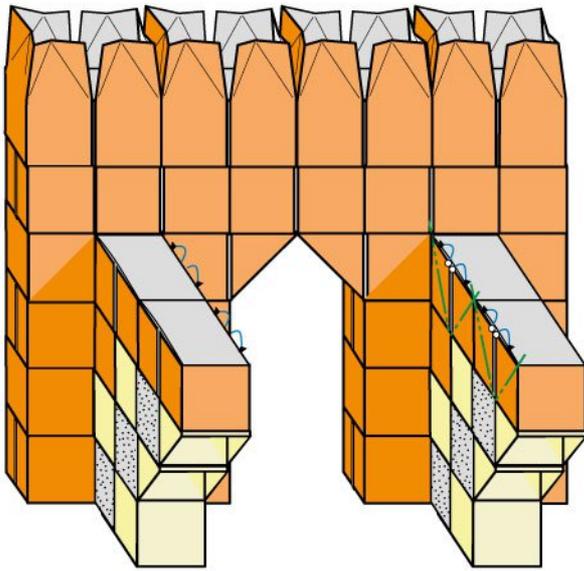
2 pieghe bisettrici a valle e, ripiegando a monte, ruotate 3D

10



2 pieghe bisettrici a monte sullo spessore e modellate il tetto 3D

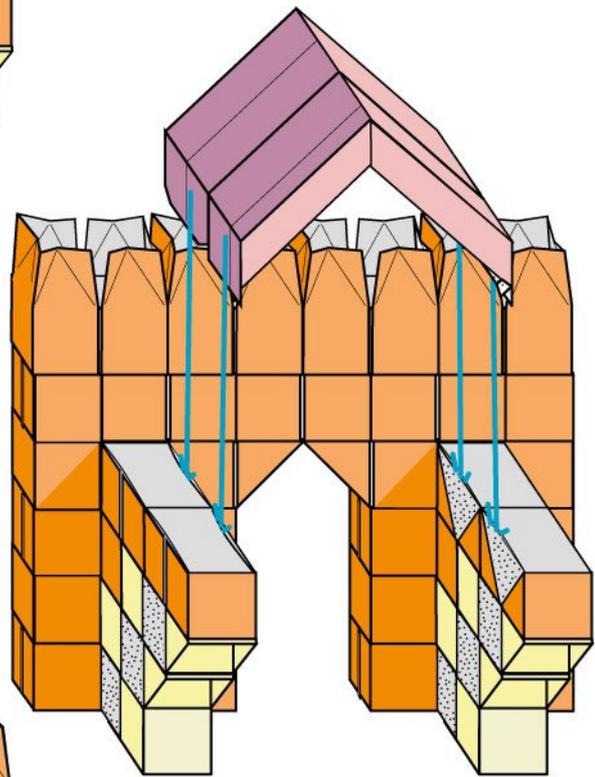
11



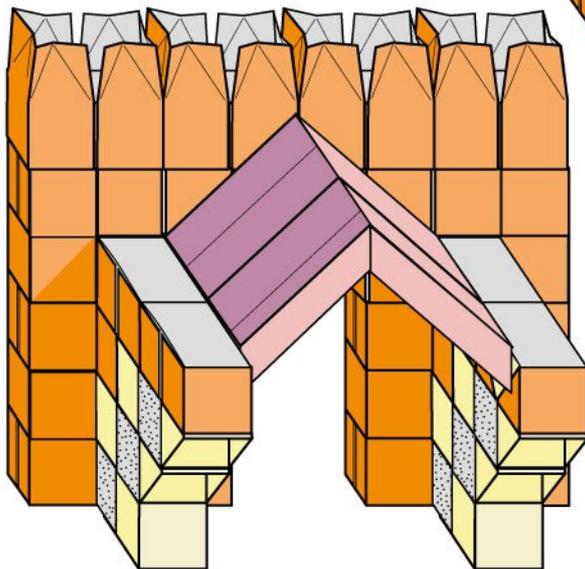
12

Montate il tetto inserendone la base nelle tasche dei blocchi B2

Realizzazione delle 2 spalle con blocchi B3, B1 e B2.
Eseguite 8 pieghe a monte e piegate all'interno i vertici indicati dei 4 semiblocchi B2



13



14

Protiro ultimato

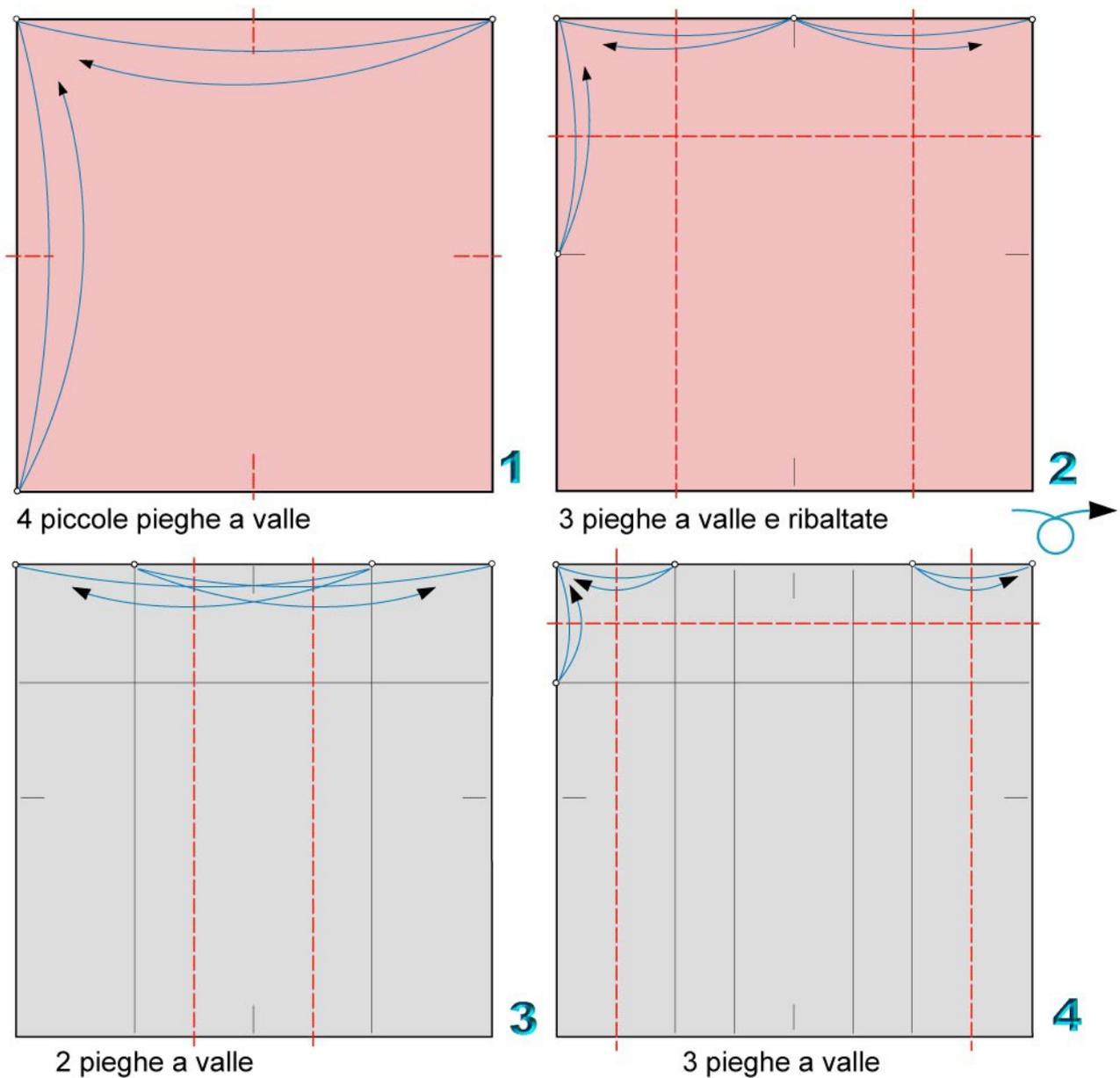
ROOF

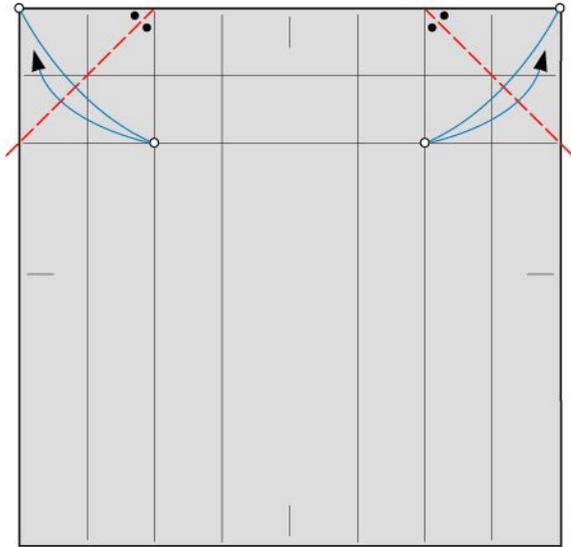
The construction of a large horizontal structure, using the standard pieces of paper, implies the need to create some bracketing in each of them in order to make them more rigid. Furthermore, the creation of a tough locking system is required.

Bracketing, from the aesthetic point of view, stands for the crossbars of a wooden ceiling.

The roof has an inclination of 45° and is made joining a plurality of panels, each formed by a set of modules.

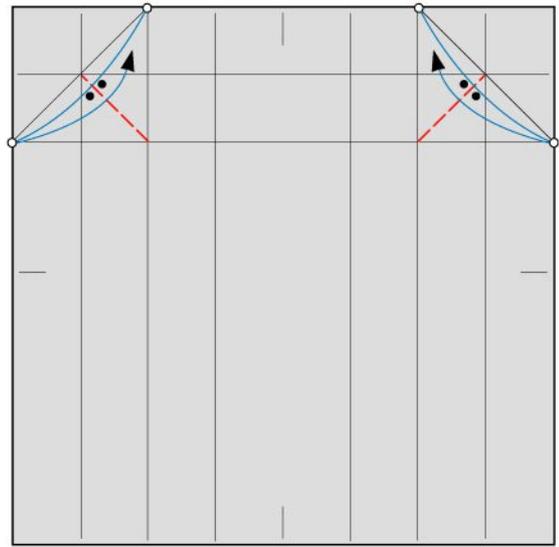
COSTRUZIONE DI UN MODULO PER FORMARE UN PANNELLO SOLAIO O TETTO





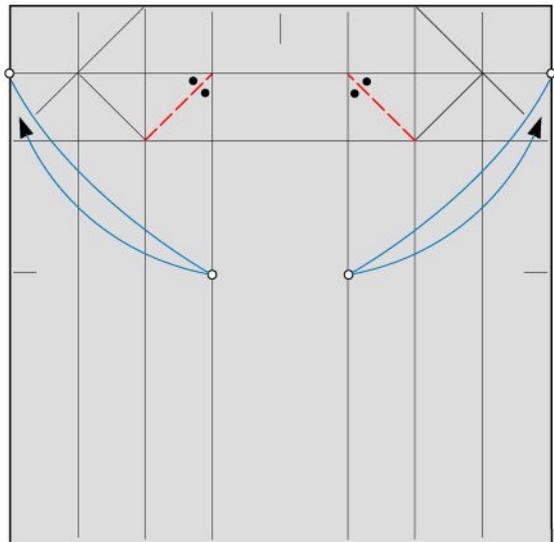
5

2 pieghe bisettrici a valle



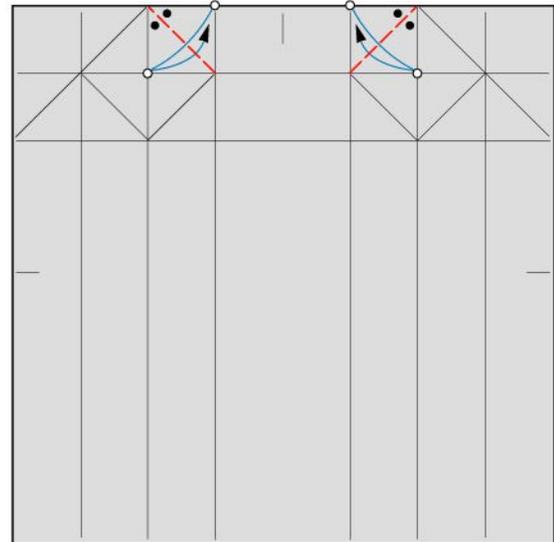
6

2 pieghe bisettrici a valle



7

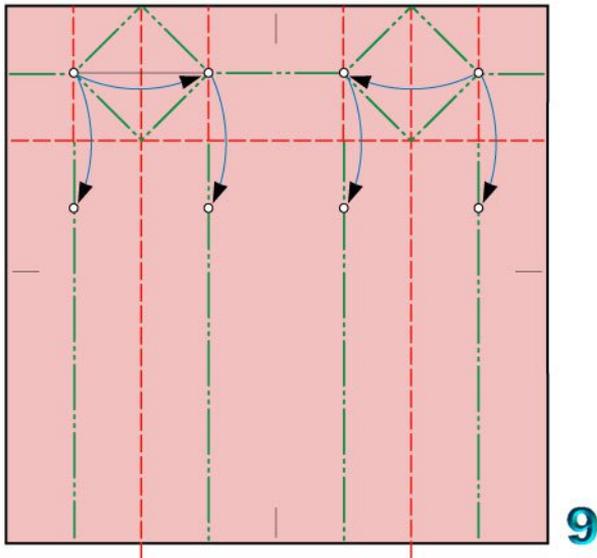
2 pieghe bisettrici a valle



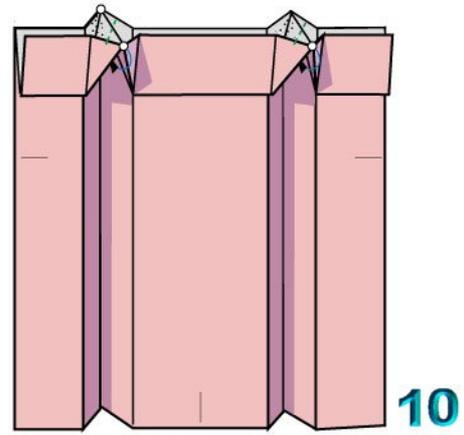
8

2 pieghe bisettrici a valle e ribaltate

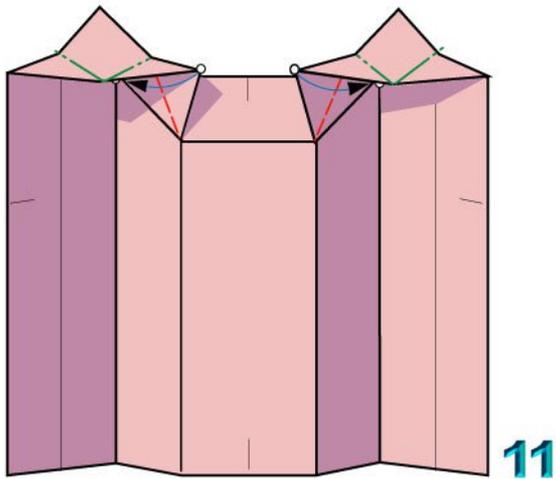




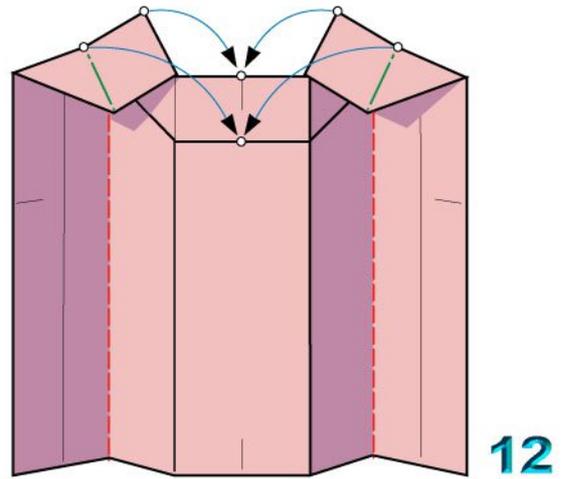
Ripiegando a valle ed a monte ruotate 3D



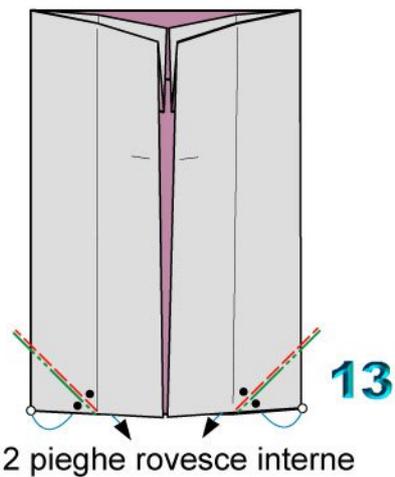
Rovesciate all'interno i 2 vertici indicati



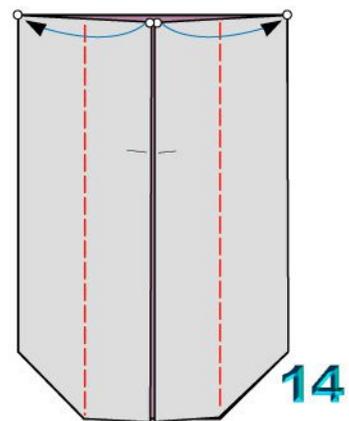
Per agevolare il rovesciamento dei 2 vertici può essere utile sollevare le estremità del modello



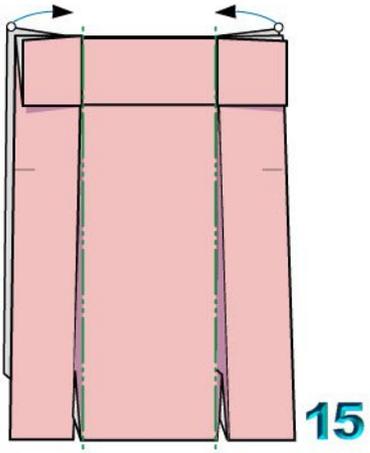
Richiudete ripiegando a valle ed a monte



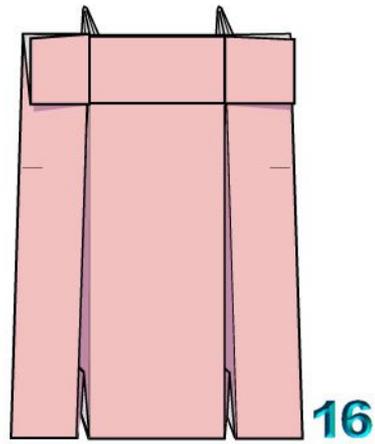
2 pieghe rovesce interne



Ripiegando a valle ruotate

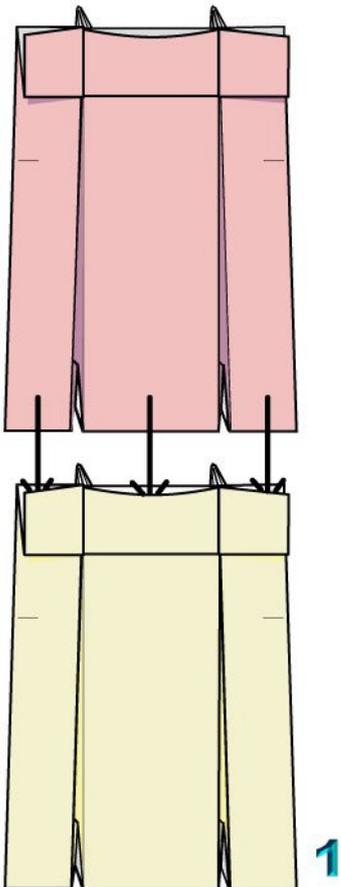


Ruotate e sistemate
ortogonalmente
le 2 fasce laterali

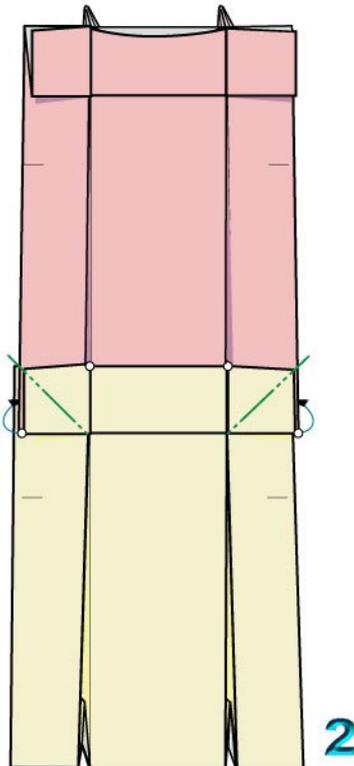


Modulo solaio
tetto ultimato

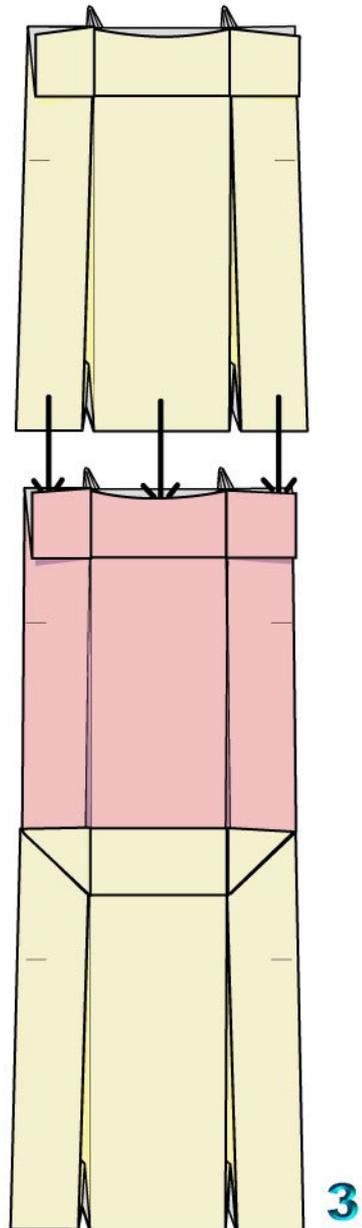
UNIONE DEI MODULI PER REALIZZARE
UN PANNELLO SOLAIO O TETTO



Inserite le 3 appendici
inferiori di un modulo
entro le tasche superiori
dell'altro

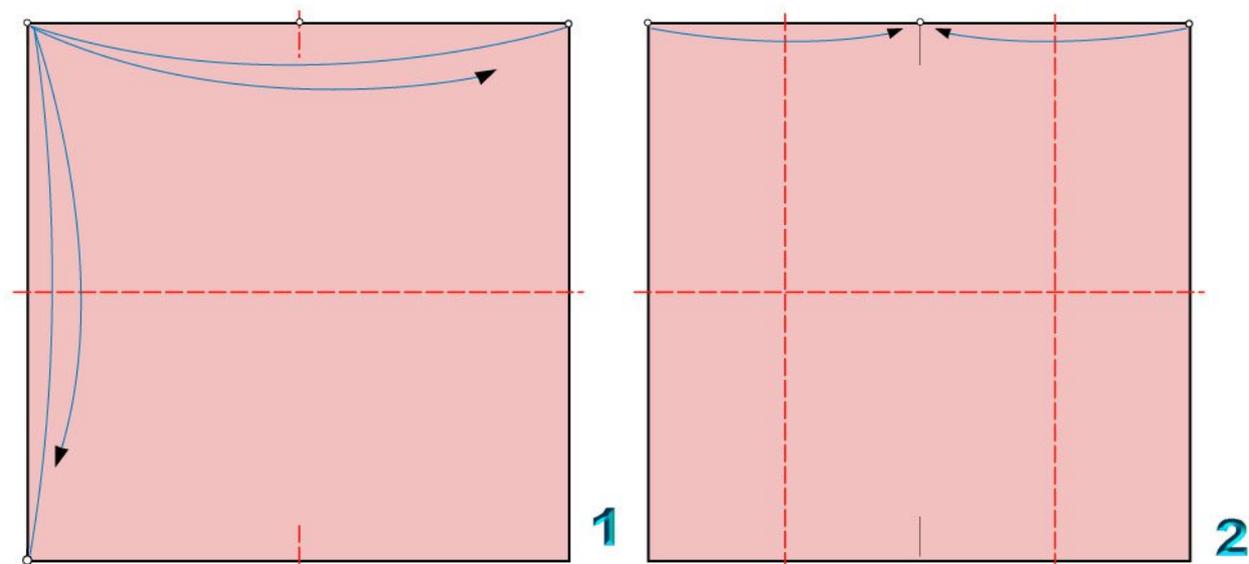


2 pieghe a monte, ruotate
e bloccate l'unione



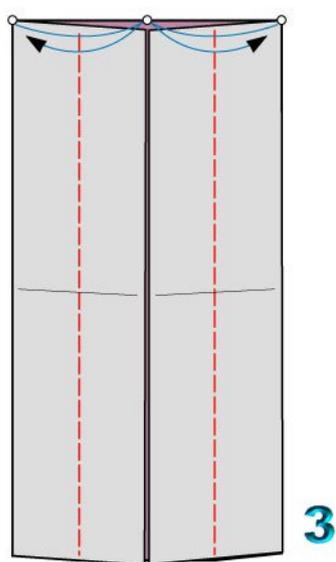
Ripetete l'unione con
un altro modulo

COSTRUZIONE DI UN MODULO BASE PER IL COLMO DI UN TETTO

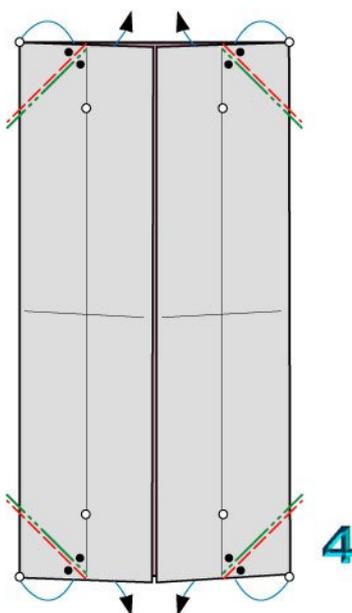


3 pieghe a valle, 2 piccole

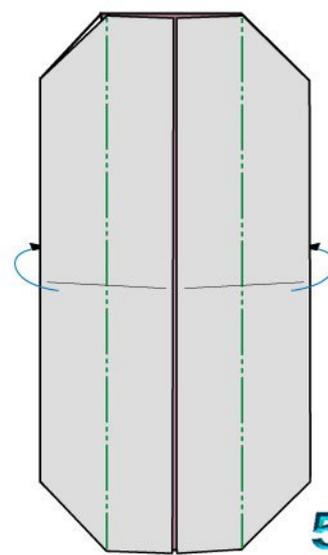
3 pieghe a valle e ruotate



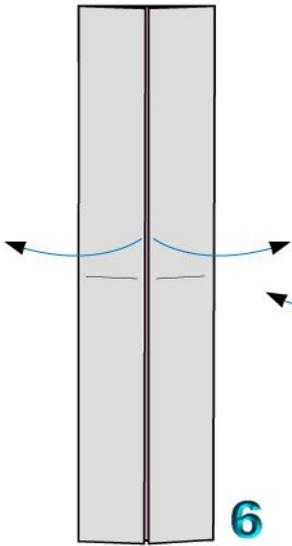
2 pieghe a valle



4 pieghe rovesce interne

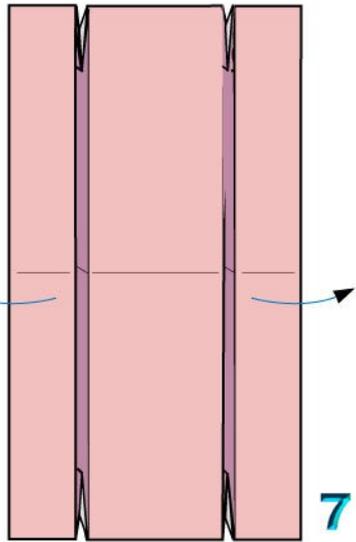


2 pieghe a monte e ruotate



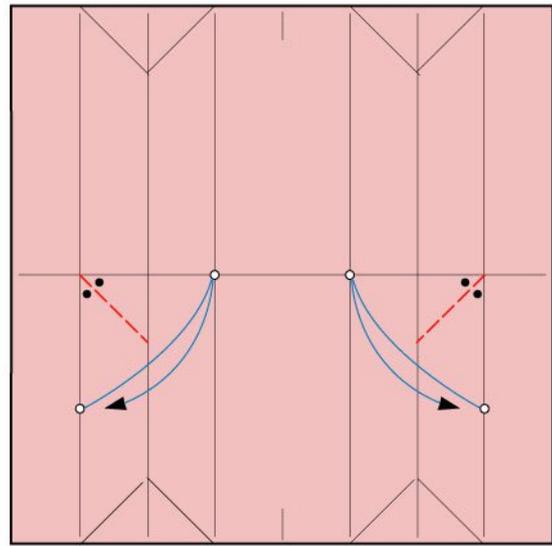
6

Aprite



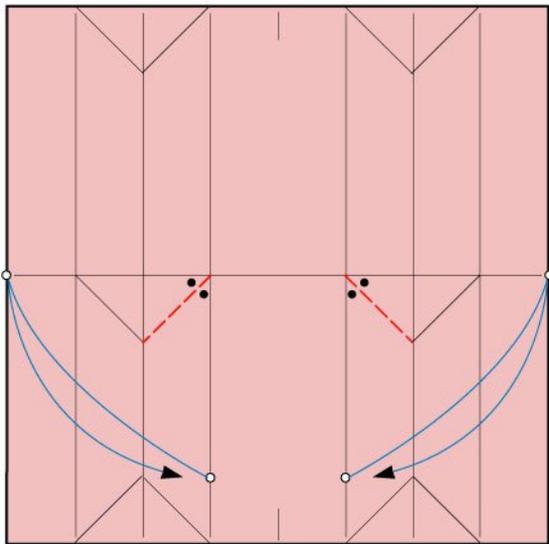
7

Continuate ad aprire



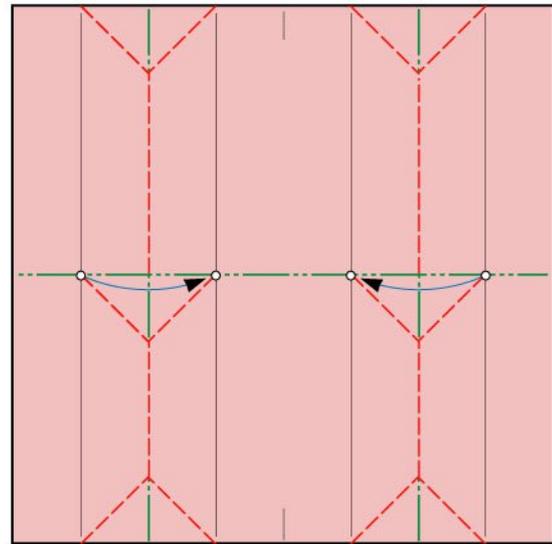
8

2 pieghe bisettrici a valle



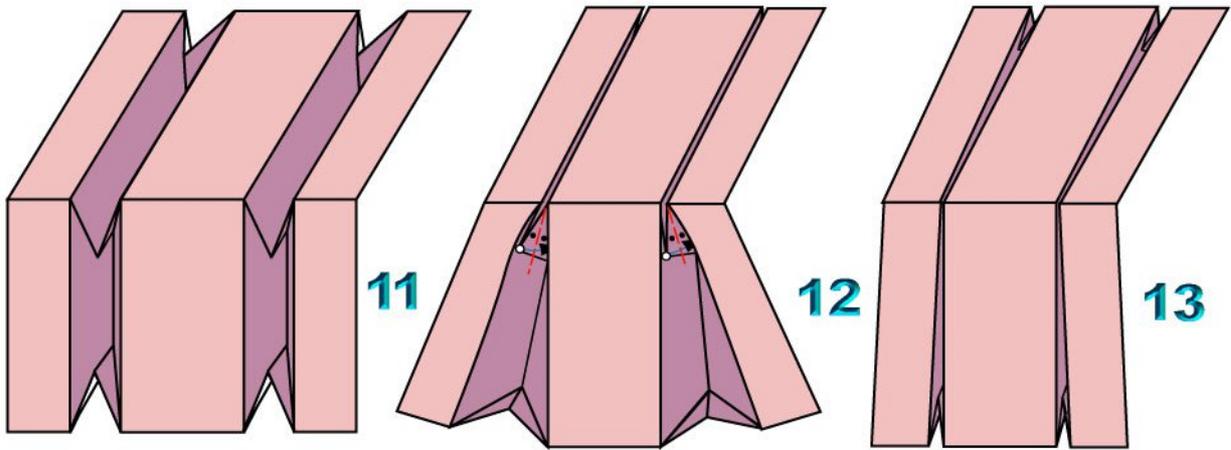
9

2 pieghe bisettrici a valle

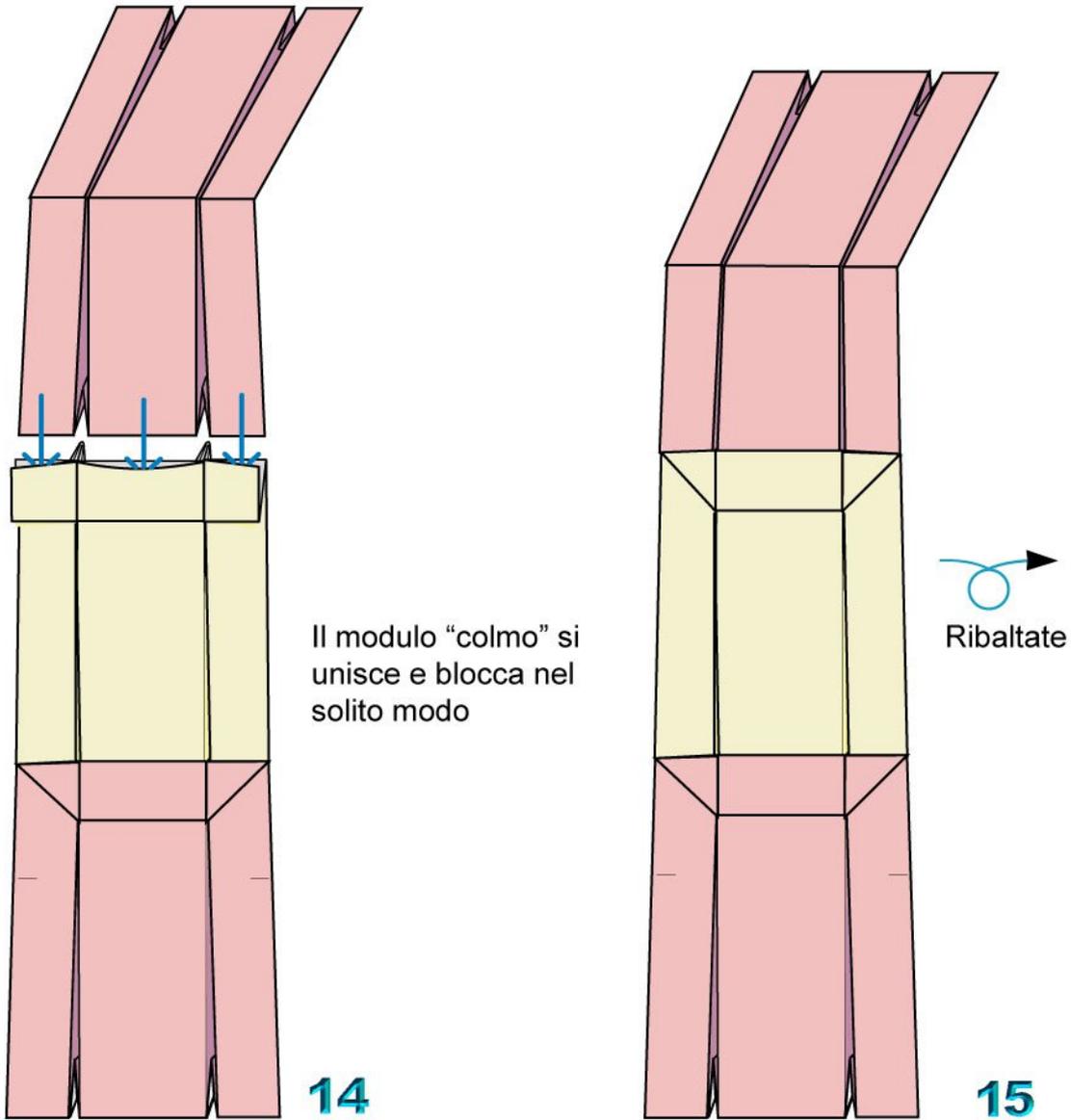


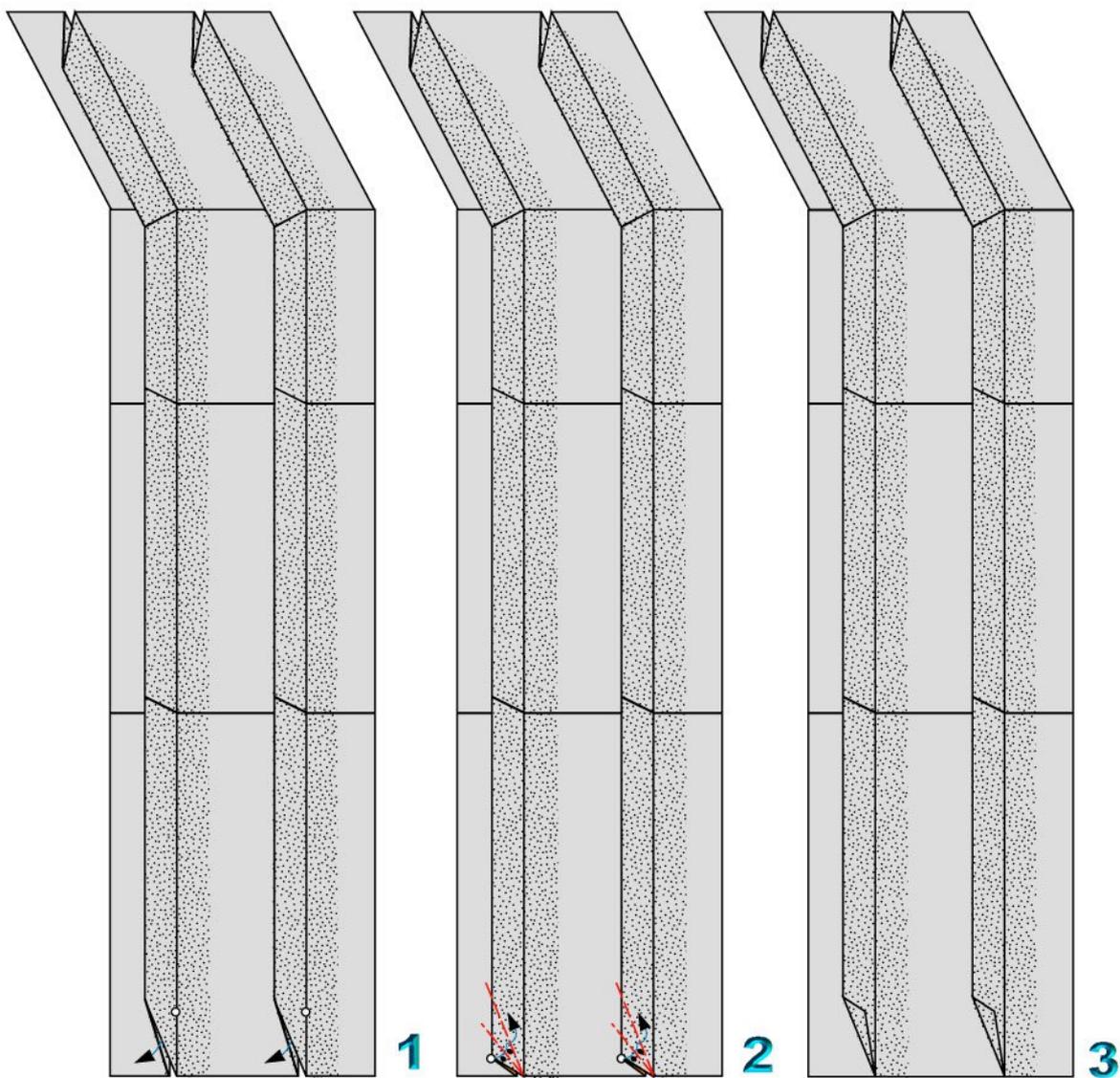
10

Ripiegando a valle ed a monte modellate 3D



Eseguite 2 piccole pieghe a valle per bloccare le nervature in posizione chiusa

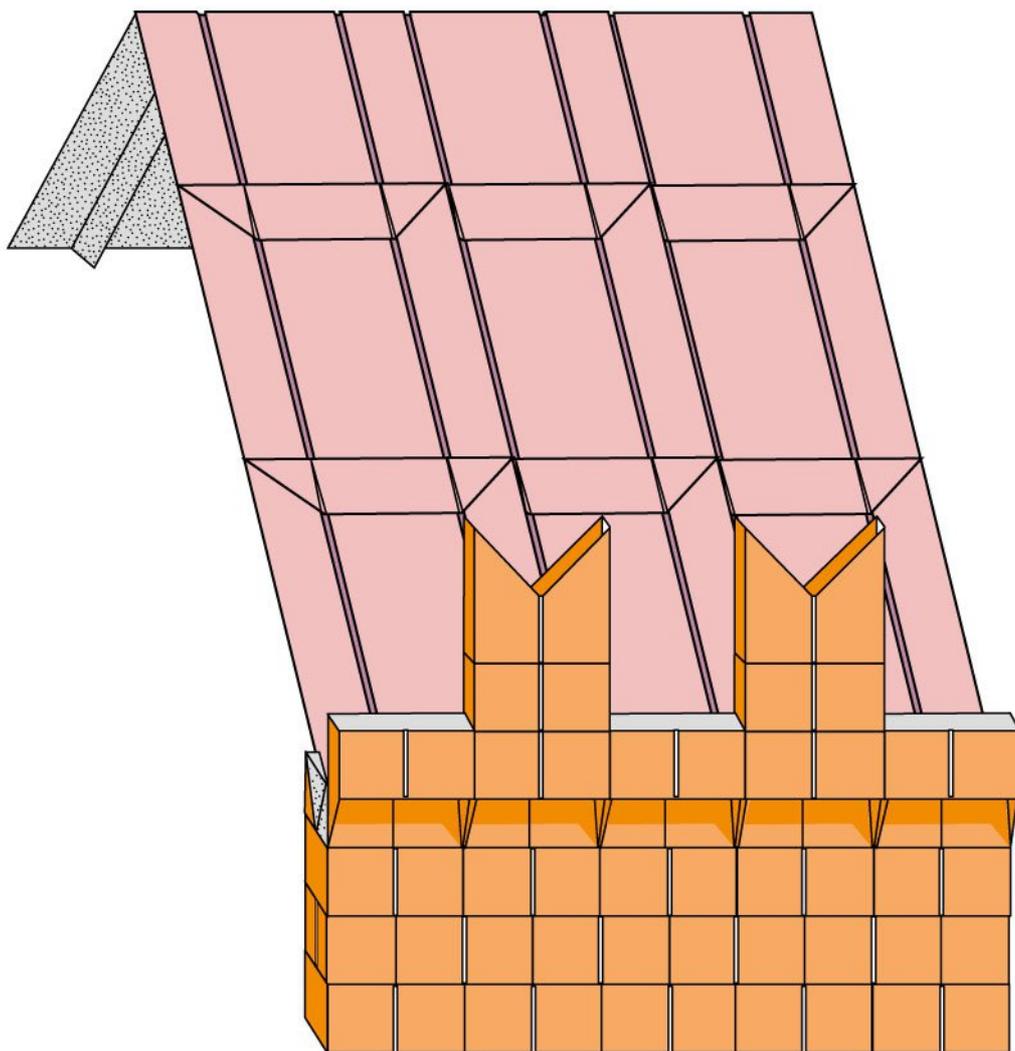




L'estremità del pannello tetto va elaborata per poterlo appoggiare sui supporti

Le estremità delle nervature si ripiegano 2 volte a valle

Vista inferiore del pannello tetto ultimato

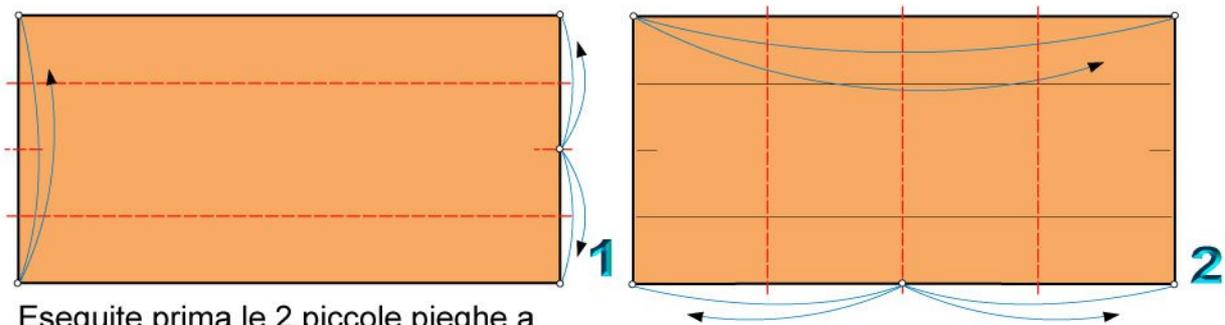


ESEMPIO DI TETTO APPOGGIATO SU UN SUPPORTO MURARIO,
IN QUESTO CASO UN CAMMINO DI RONDA CON PIOMBATOIE

COSTRUZIONE BLOCCO PER TIMPANO

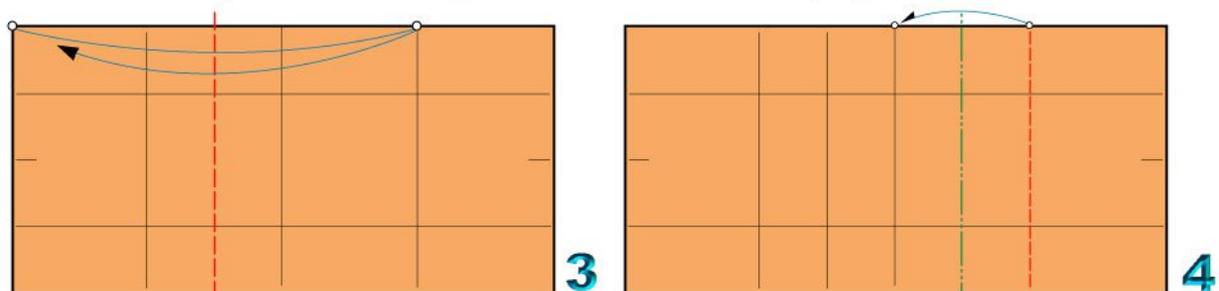
Il timpano è quella parte di muro di forma triangolare compresa tra 2 falde di muro, sulla quale si appoggia lateralmente il solaio del tetto.

Il blocco che si costruisce consente unicamente la realizzazione di timpani di 45°.



Eseguite prima le 2 piccole pieghe a valle centrali e poi le altre 2 longitudinali

3 pieghe a valle



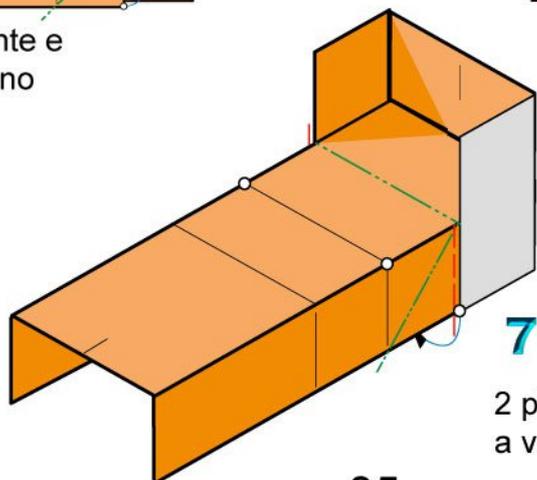
1 piega a valle

1 piega a monte e ruotate ripiegando a valle

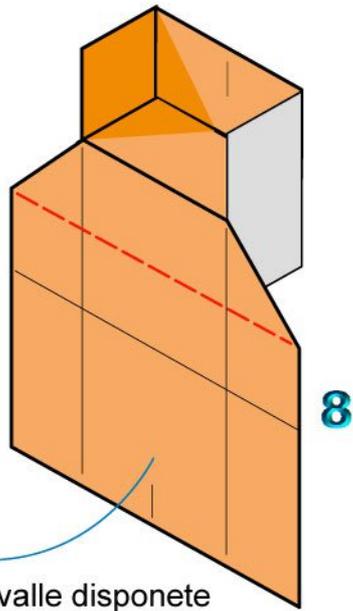


2 pieghe a monte e ruotate all'interno

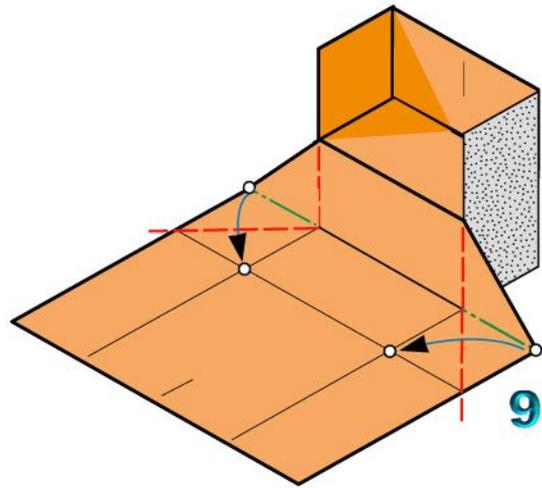
Ripiegando a valle ed a monte modellate 3D



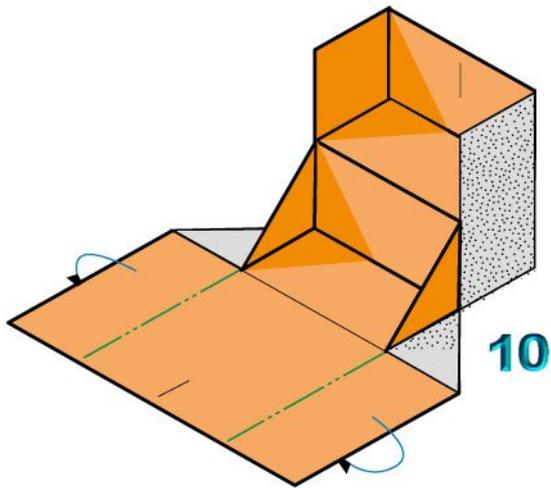
2 pieghe a monte e, ripiegando a valle, modellate 3D



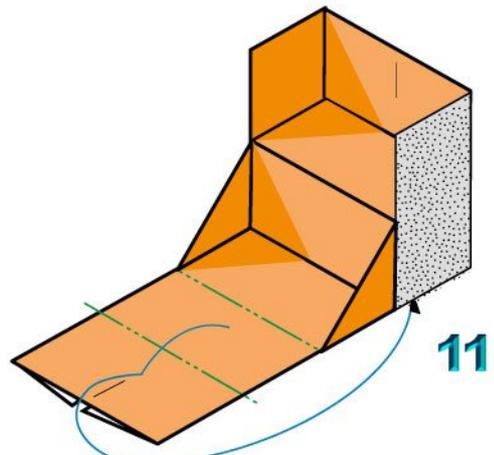
ripiegando a valle disponete
orizzontalmente il rettangolo indicato



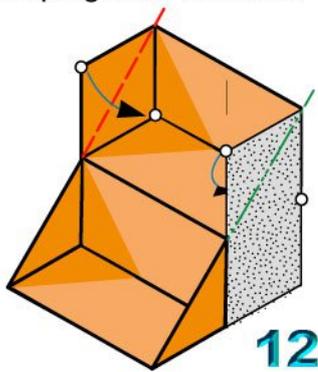
2 pieghe rovesce interne



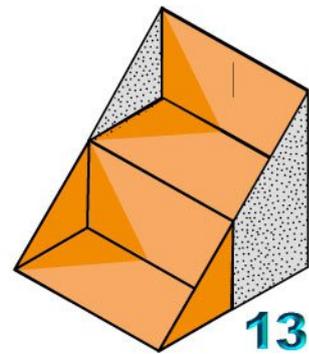
ruotate ripiegando a monte



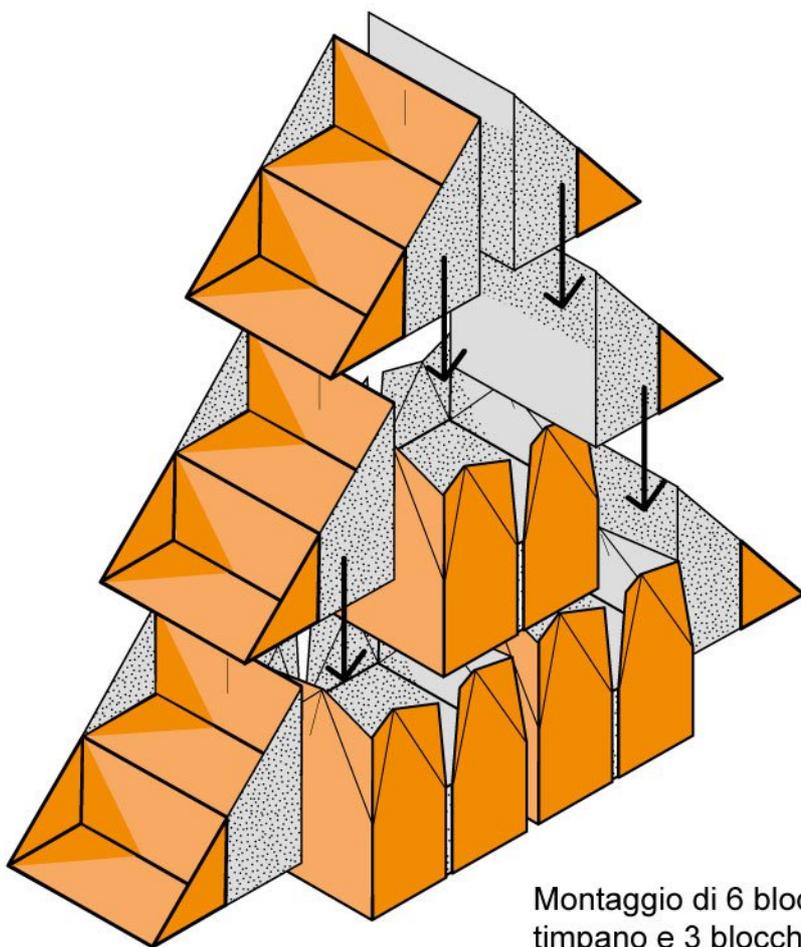
ruotate ripiegando a monte
e intascate all'interno



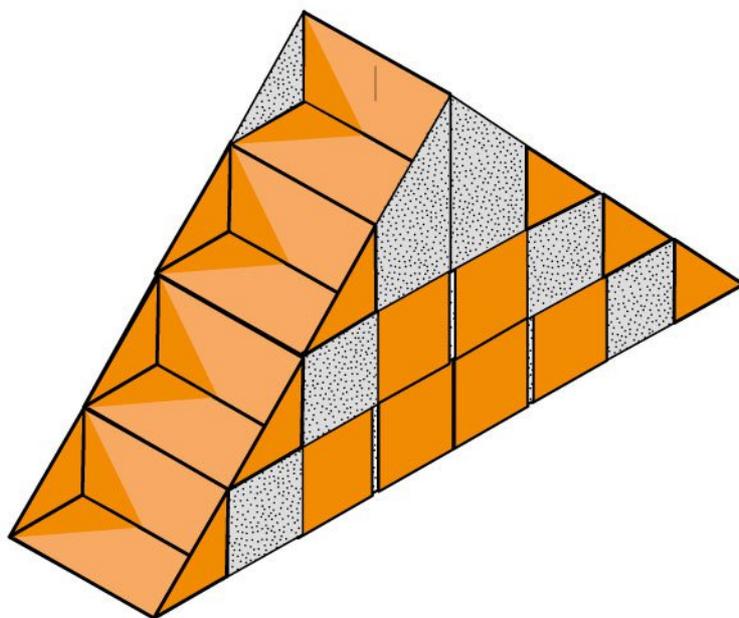
2 pieghe a monte, 1 per lato



Blocco per timpano ultimato



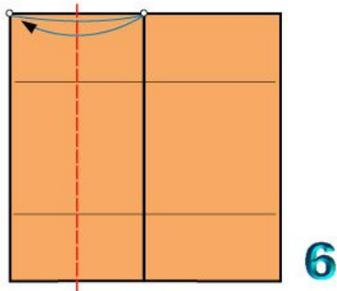
Montaggio di 6 blocchi per timpano e 3 blocchi A



ESEMPIO DI TIMPANO ULTIMATO

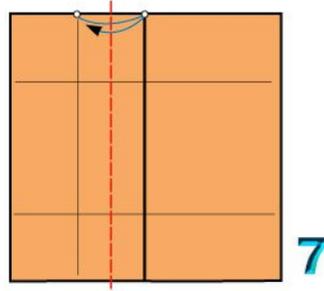
COSTRUZIONE DEL SUPPORTO MENSOLA PER TETTO

Blocco che consente il montaggio del tetto con cornicione a sbalzo e con grondaia



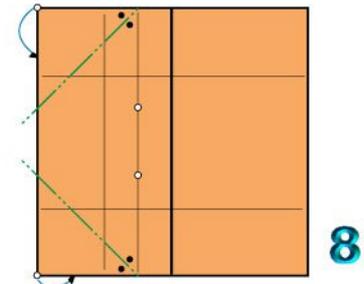
6

Partite dalla fig.n.6 del blocco A; 1 piega a valle



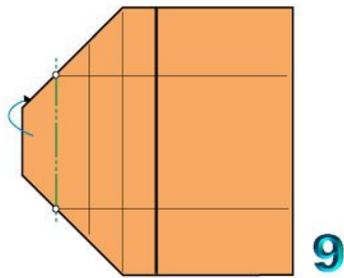
7

1 piega a valle solo sulla sup. in vista



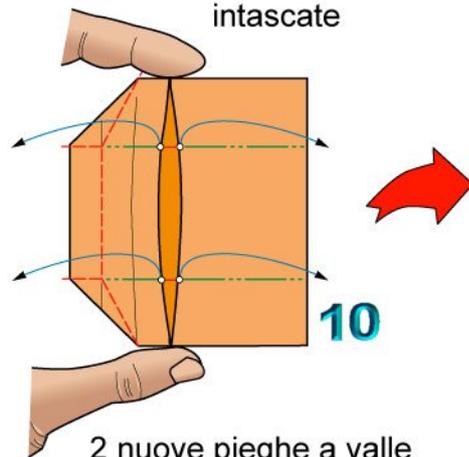
8

2 pieghe bisettrici a monte, ruotate ed intascate



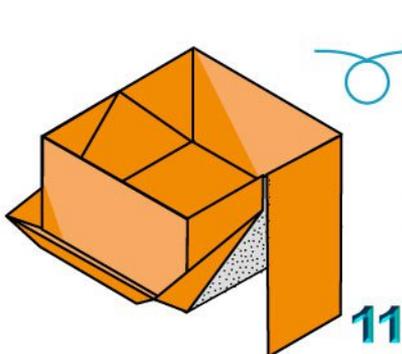
9

1 piega a monte e ruotate



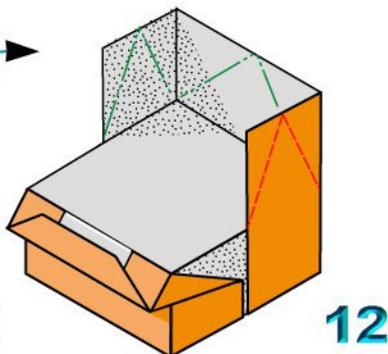
10

2 nuove pieghe a valle e, ripiegando a valle ed a monte, modellate 3D



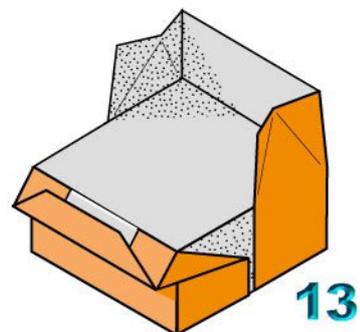
11

ribaltate



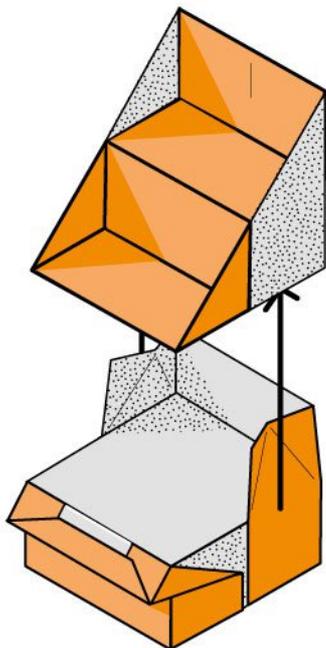
12

con una serie di pieghe a valle restringete il perimetro superiore



13

supporto mensola per tetto ultimato

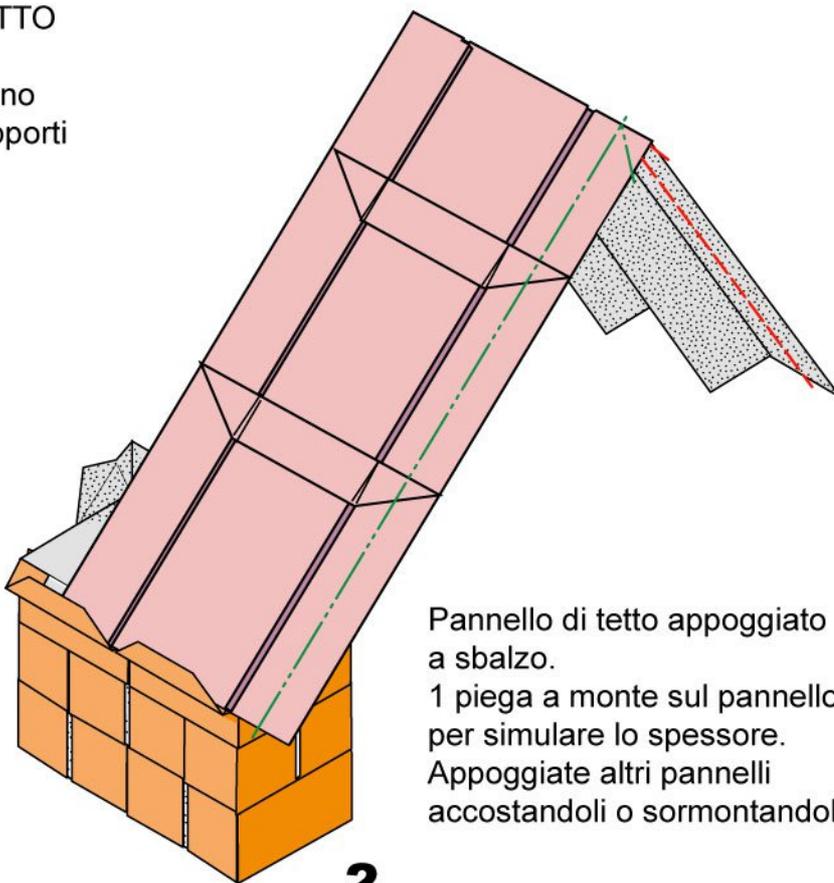
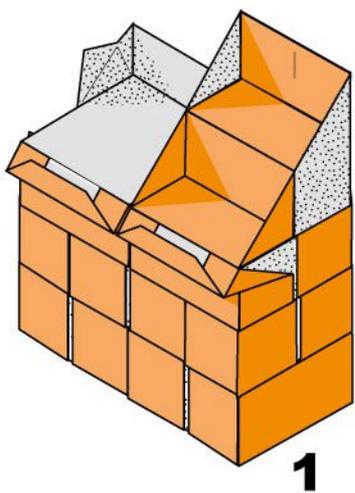


supporto mensola per tetto con
inserito un blocco per timpano ultimato

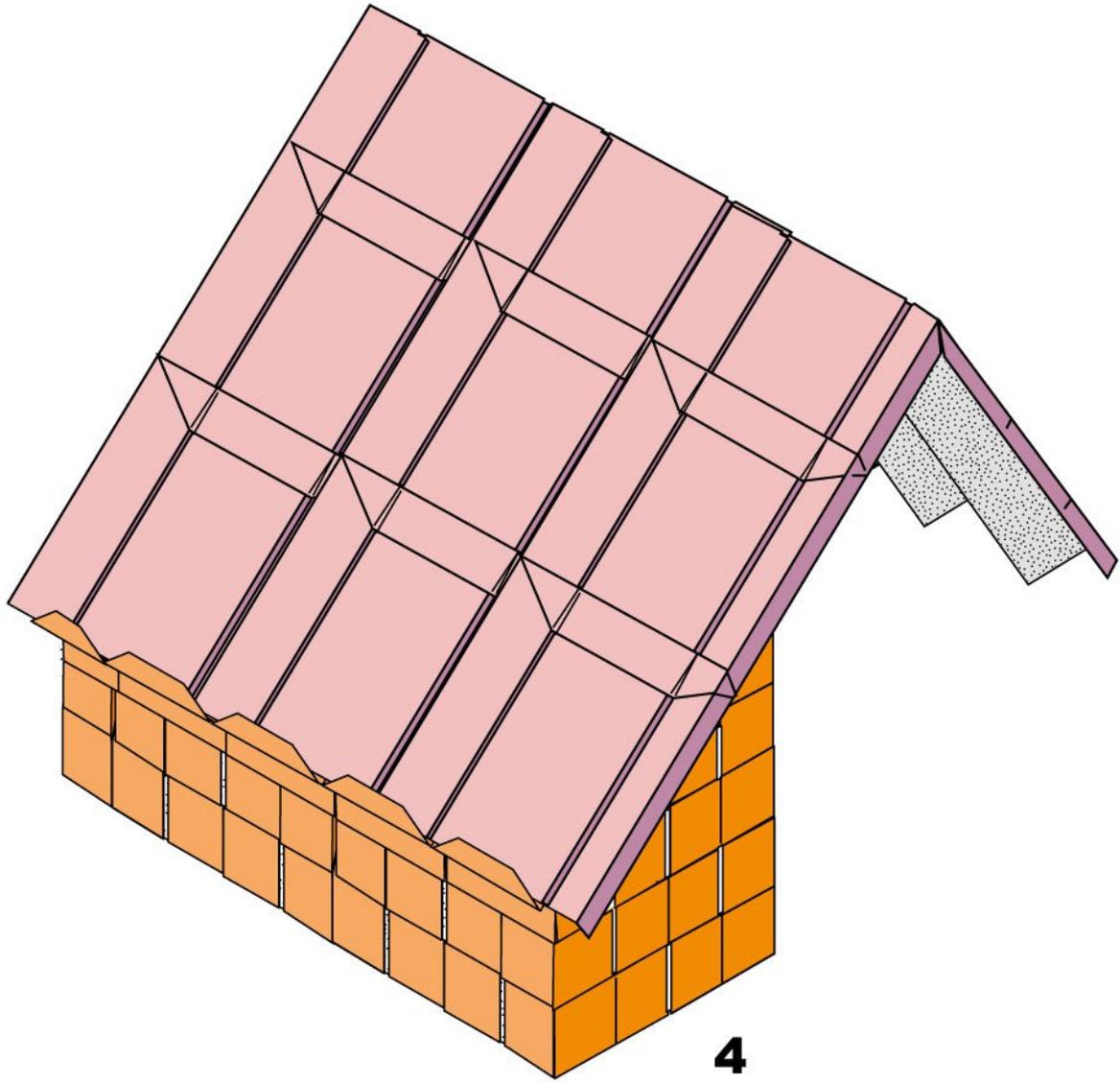
inserimento di un blocco per timpano
in un supporto mensola tetto

COSTRUZIONE DI UN TETTO

Inserite un blocco per timpano
sul primo di una serie di supporti
per mensola

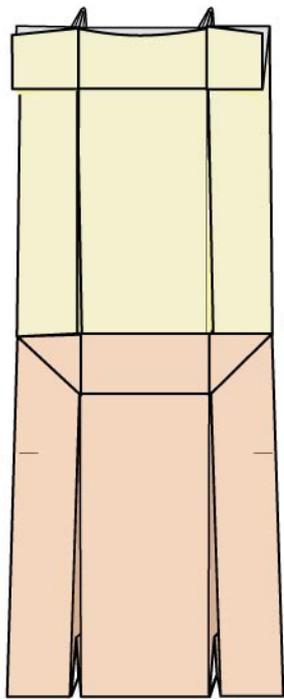


Pannello di tetto appoggiato
a sbalzo.
1 piega a monte sul pannello
per simulare lo spessore.
Appoggiate altri pannelli
accostandoli o sormontandoli



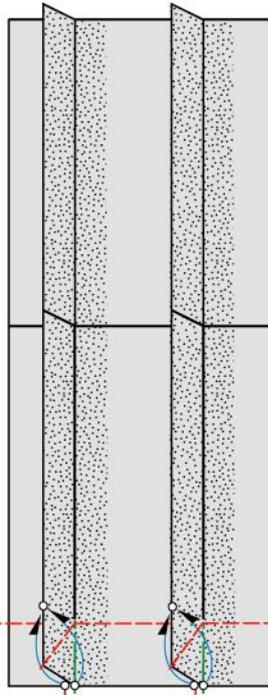
ESEMPIO DI TETTO CON 3 PANNELLI

LARGE FLOOR SLAB



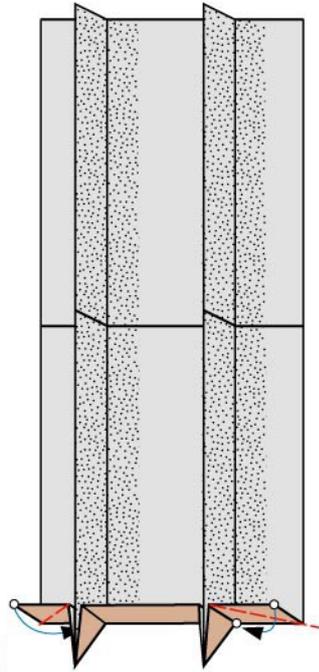
14

Ribaltate



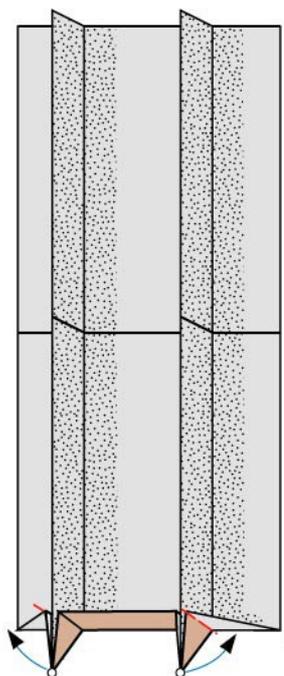
15

2 pieghe rovesce esterne



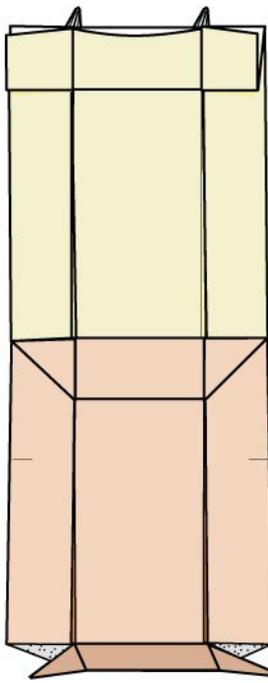
16

2 pieghe a valle e ruotate



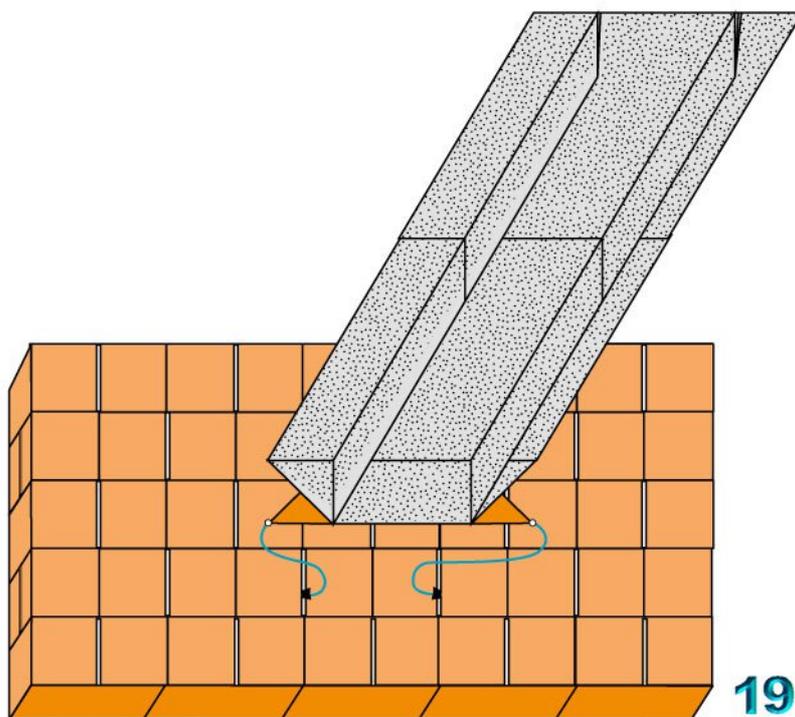
17

“Aprite” ruotando a valle



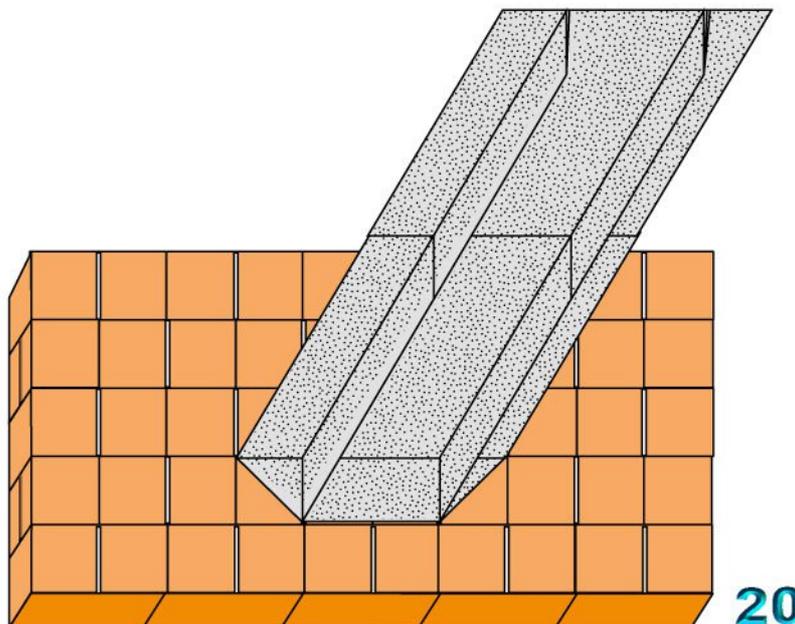
18

Pannello pronto per essere agganciato



19

Il solaio si vincola alle pareti inserendone i vertici nelle fessure presenti nel centro dei blocchi base A



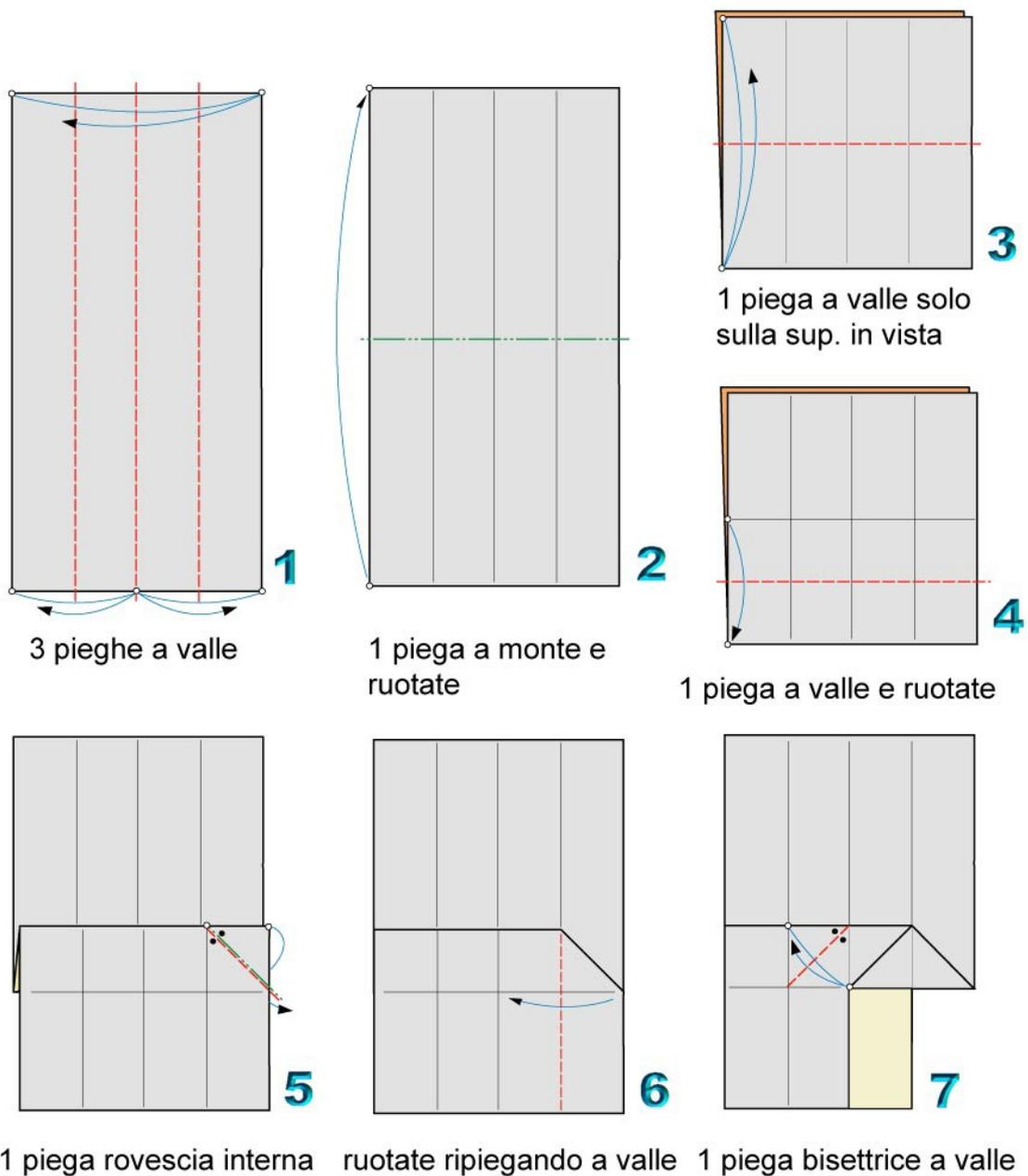
20

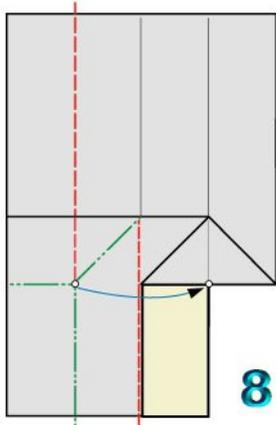
PANNELLO DI SOLAIO FISSATO ALLA PARETE

ROSE WINDOW

The main window of Romanesque and Gothic churches is large in size and circular in shape. It is found above the entrance of the nave and transepts. The rose window was usually adorned with stone decorations and colourful stained glass.

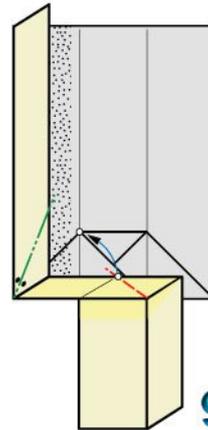
The 8 modules form the structure in stone around and holding the stained glass.





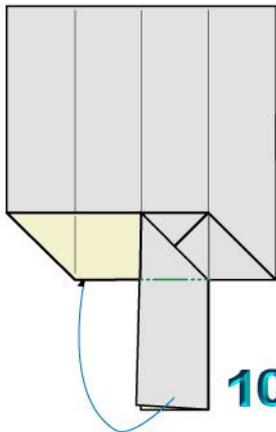
8

1 piega a monte e, ripiegando a valle ed a monte, modellate 3D



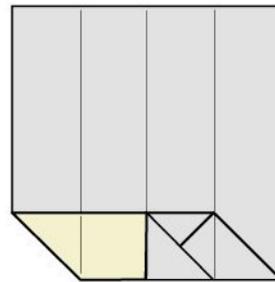
9

mediante 2 pieghe, 1 a valle ed 1 a monte, ruotate 2D



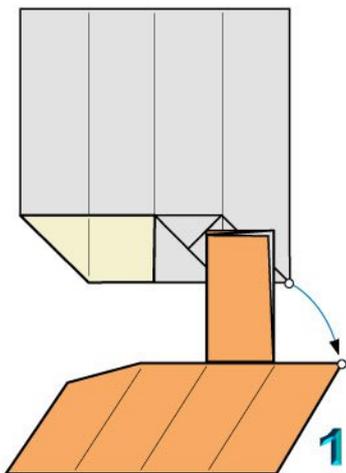
10

1 piega a monte e ruotate



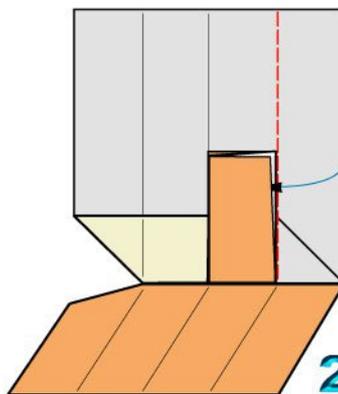
11

modulo pronto per il montaggio: costruitene altri 7



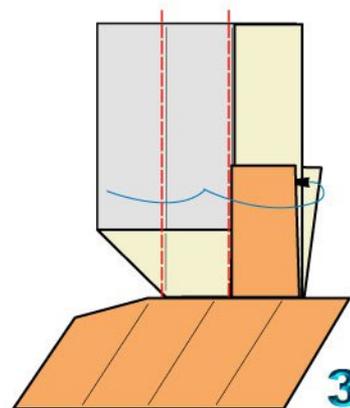
1

Unione di 2 moduli



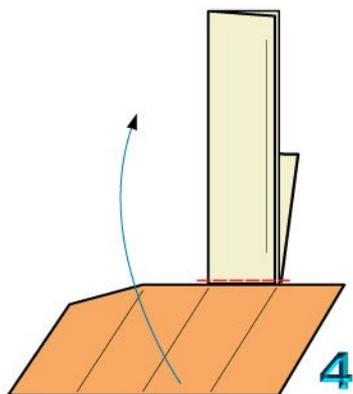
2

Ripiegando a valle intascate il bordo indicato

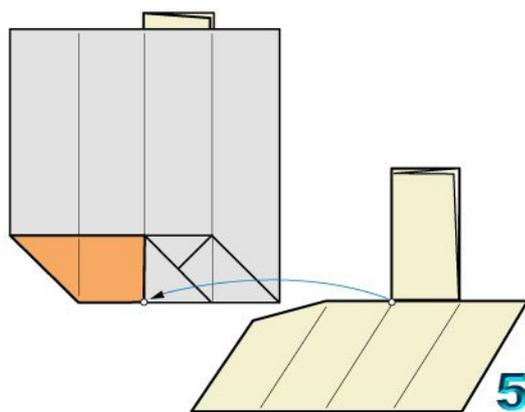


3

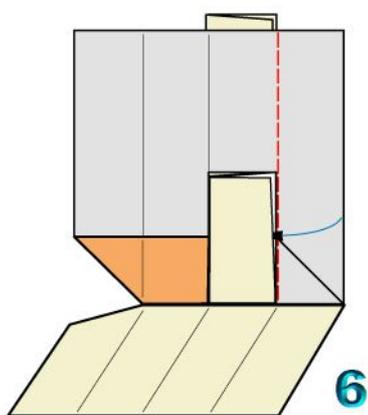
Ripiegando 2 volte a valle intascate il bordo indicato



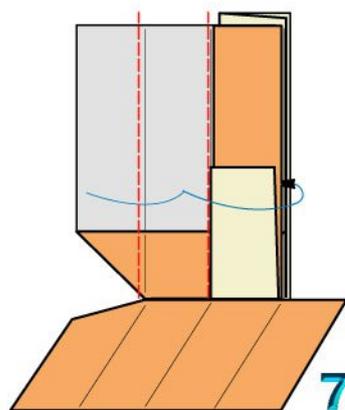
Ruotate la superficie indicata **4**



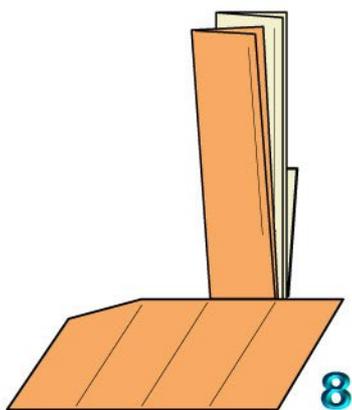
Sovrapponete un nuovo modulo **5**



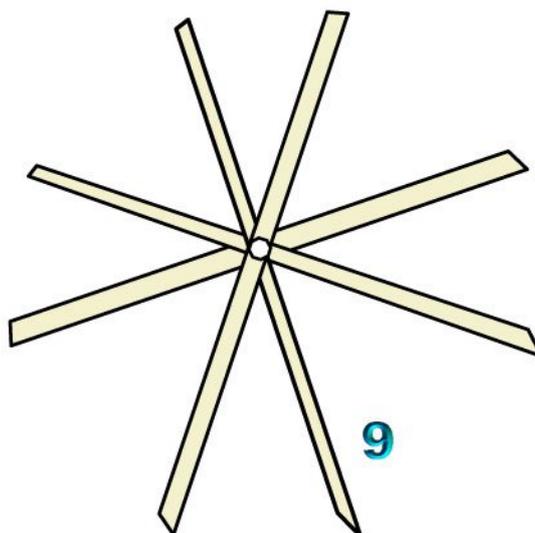
Ripiegando a valle intascate il bordo indicato **6**



Ripiegando 2 volte a valle intascate il bordo indicato **7**

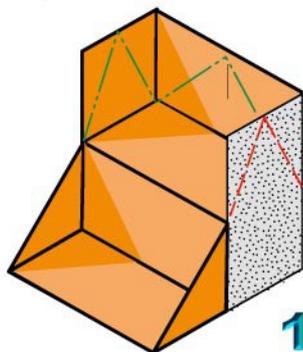


Ripetete altre 6 volte la costruzione come già effettuato precedentemente **8**

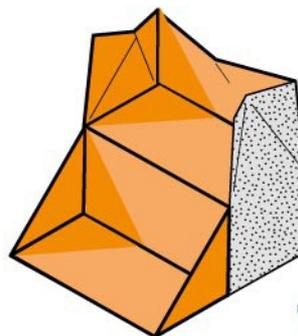


Uniti 8 moduli, la decorazione è ultimata. Inseritene le estremità nelle fessure tra un blocco e l'altro **9**

Per costruire la parte inferiore del rosone sono necessari 2 blocchi per timpano e 2 blocchi per timpano modificati:

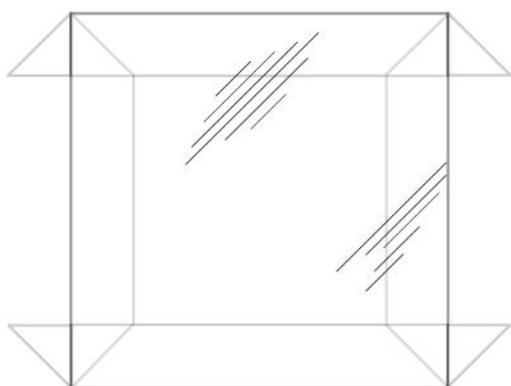


12

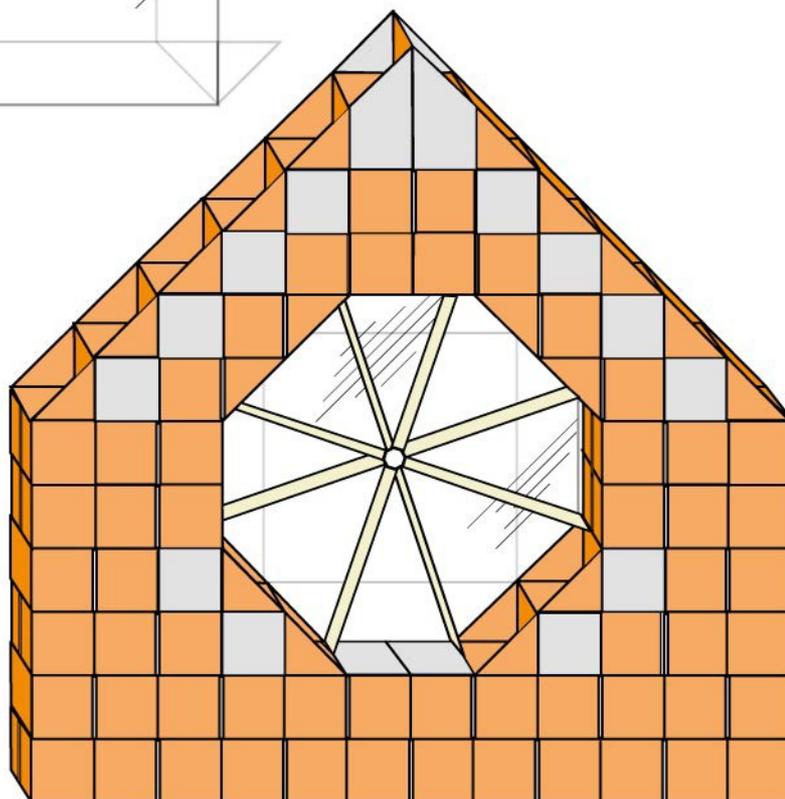


13

Partite dalla fig. n. 11 del blocco per timpano. Eseguite una serie di pieghe a valle per diminuire il perimetro superiore



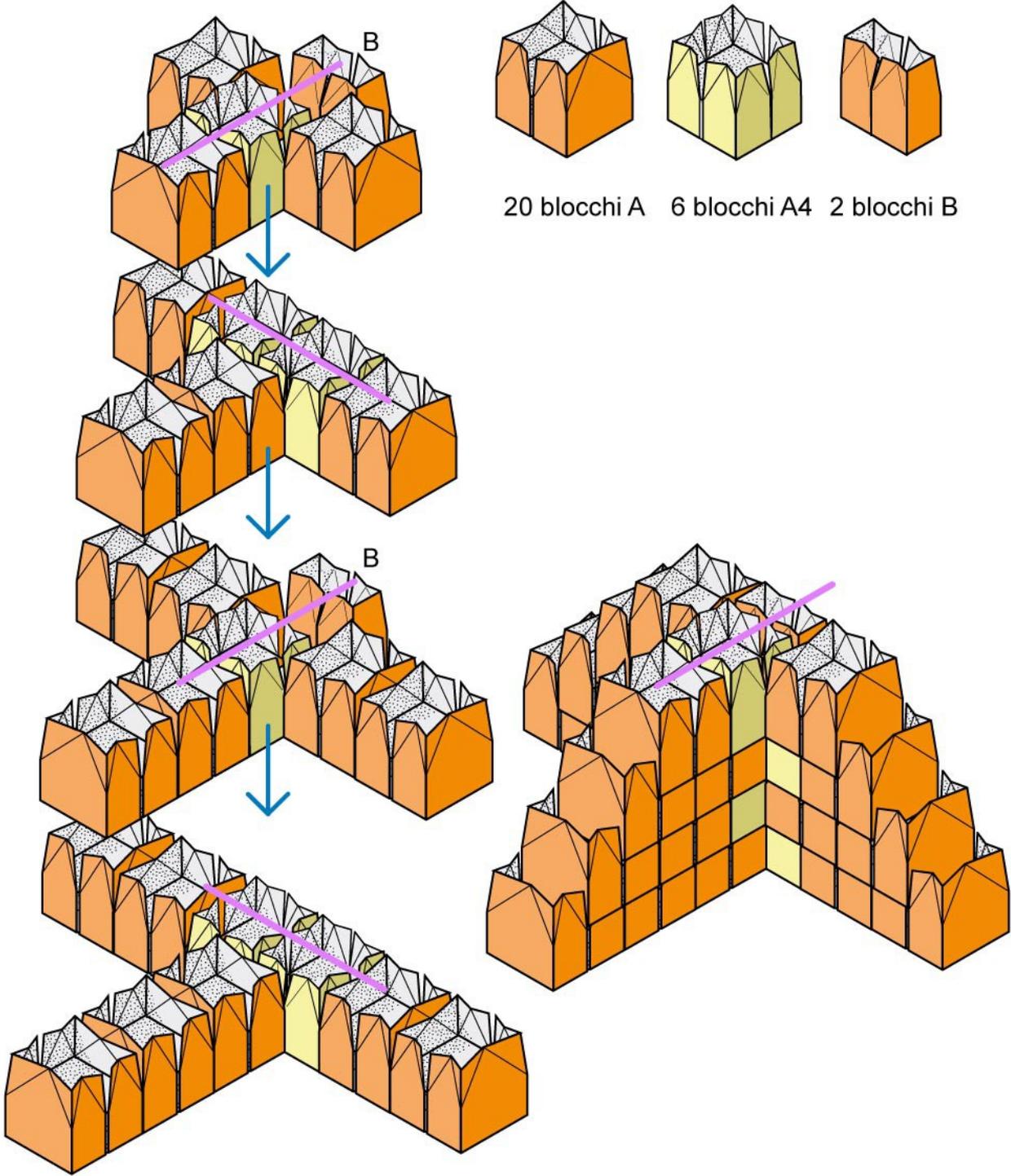
Insert a ceiling module on the back built with transparent acetate to simulate the glass and block it by inserting the vertices in the slits of the wall; including modular elements.



ESEMPIO DI ROSONE

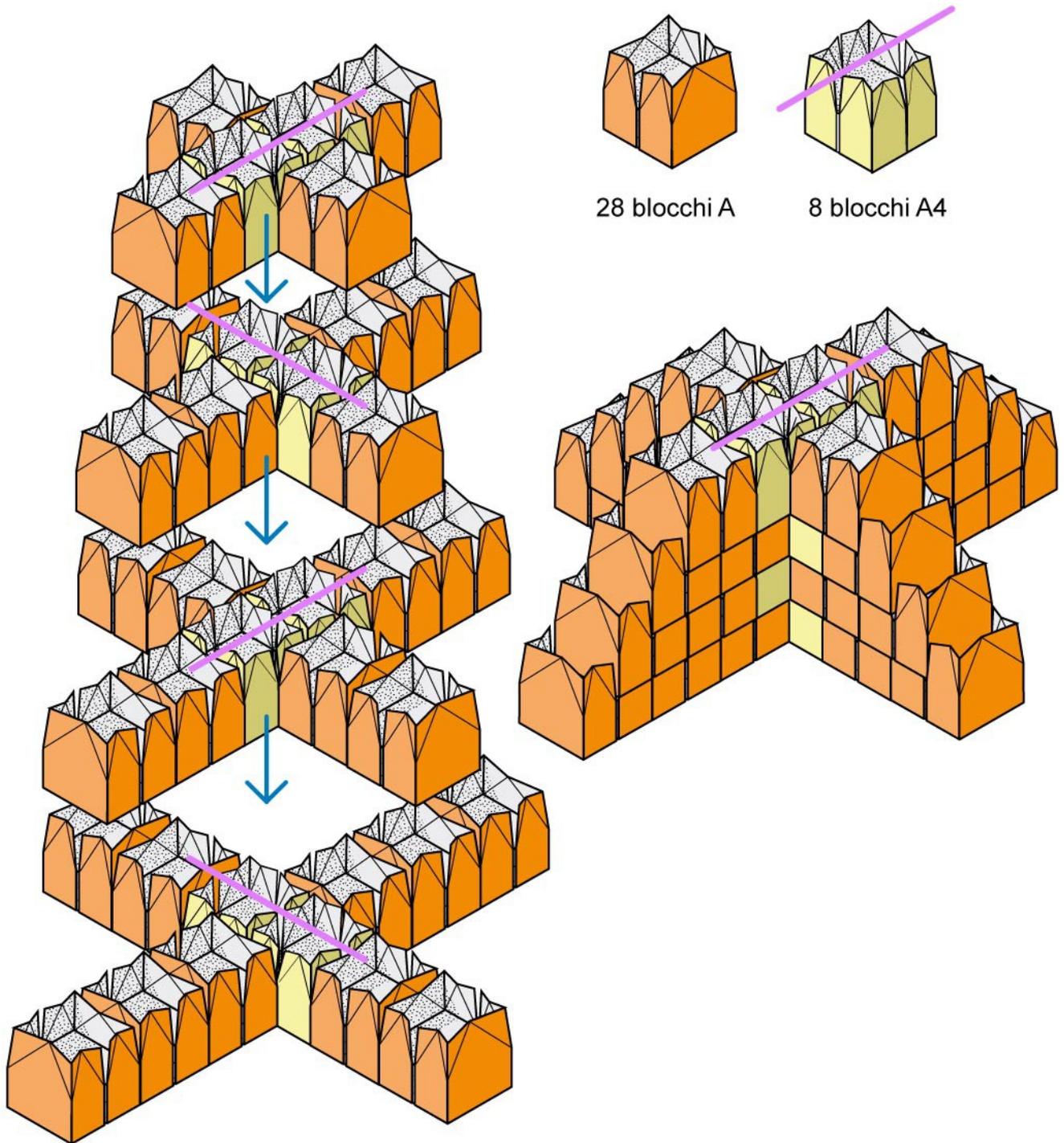
T-SHAPED WALL

T-shaped walls require 1 or 2 A4 special blocks and one half size B block every other level. The weakest part must be kept on the inside.



CROSS WALLS

Two A4 special blocks for each level are necessary to join two cross walls. The weakest part must be kept inside.



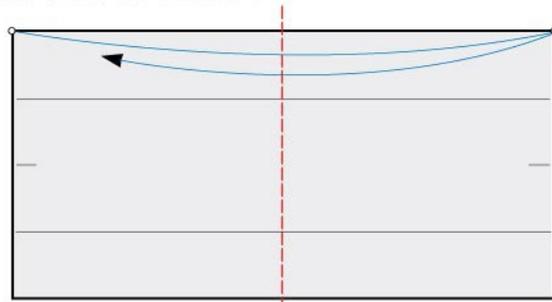
C1 - LARGE MAIN BEAM

This structural element allows the creation of openings equal to 6/8 of the sheet size. Three sheets are required for its construction; two identical leaves are joined by the long side to the central element which should be constructed with solid paper or cardboard.

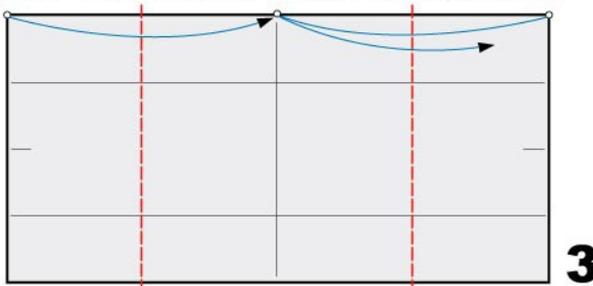
COSTRUZIONE DEL MODULO DI TESTA



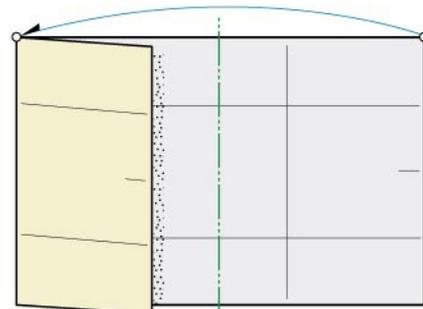
Eseguite prima le 2 piccole pieghe a valle centrali e poi le altre 2 longitudinali



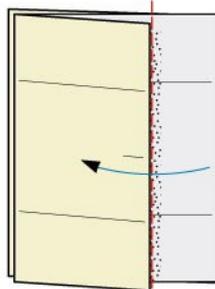
1 piega a valle verticale centrale



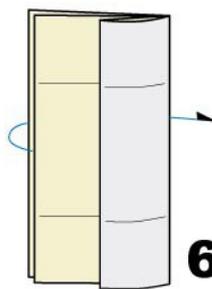
2 pieghe a valle e ruotate il bordo sinistro



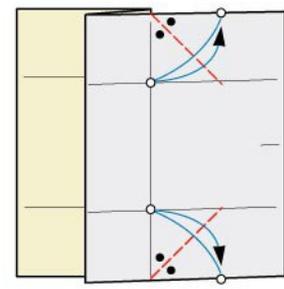
1 piega a monte e ruotate



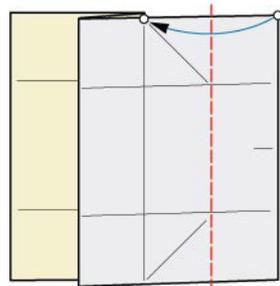
1 piega a valle e ruotate



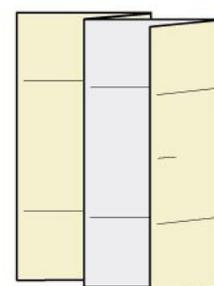
Ruotate il bordo sottostante



2 pieghe bisettrici a valle

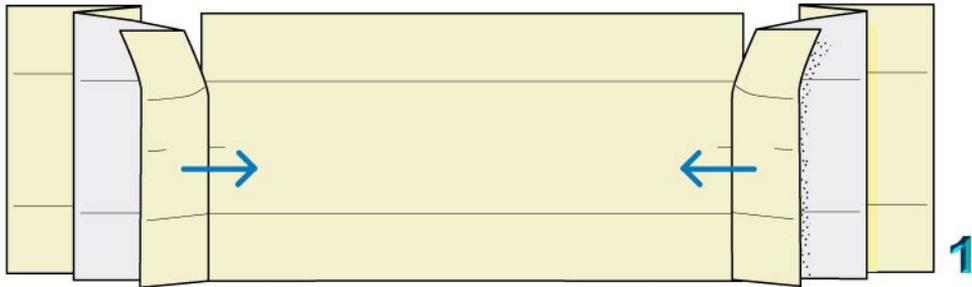


1 piega a valle e ruotate

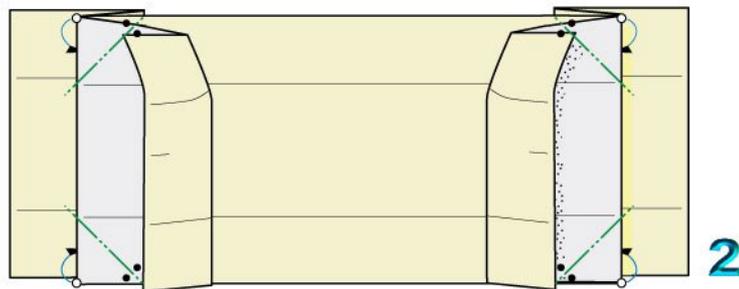


Piegate un altro modulo di testa

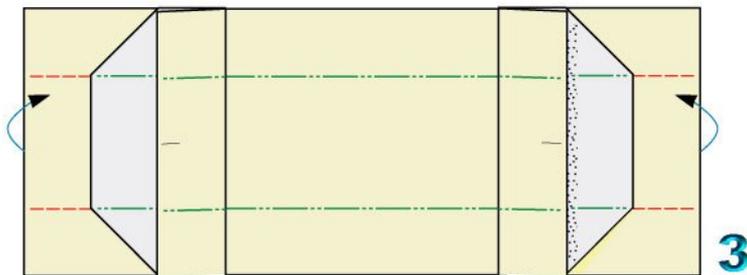
UNIONE DEI 2 MODULI DI TESTA CON QUELLO CENTRALE



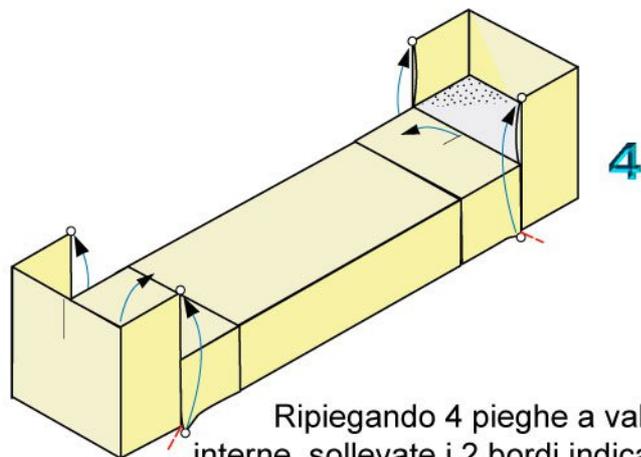
Intascate il modulo centrale nei 2 moduli di testa



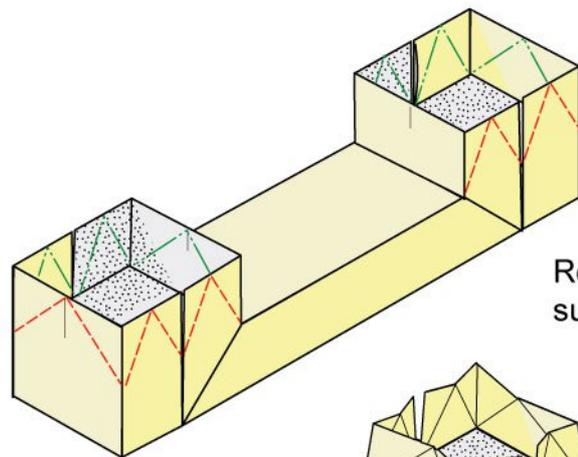
4 pieghe bisettrici a monte e ruotate bloccando il tutto



Ripiegando a valle ed a monte modellate 3D

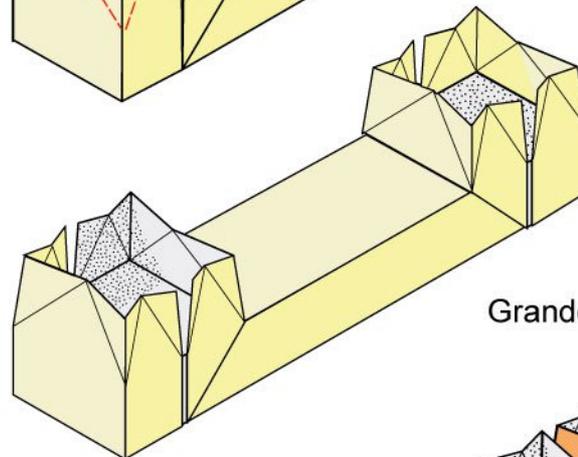


Ripiegando 4 pieghe a valle interne, sollevate i 2 bordi indicati



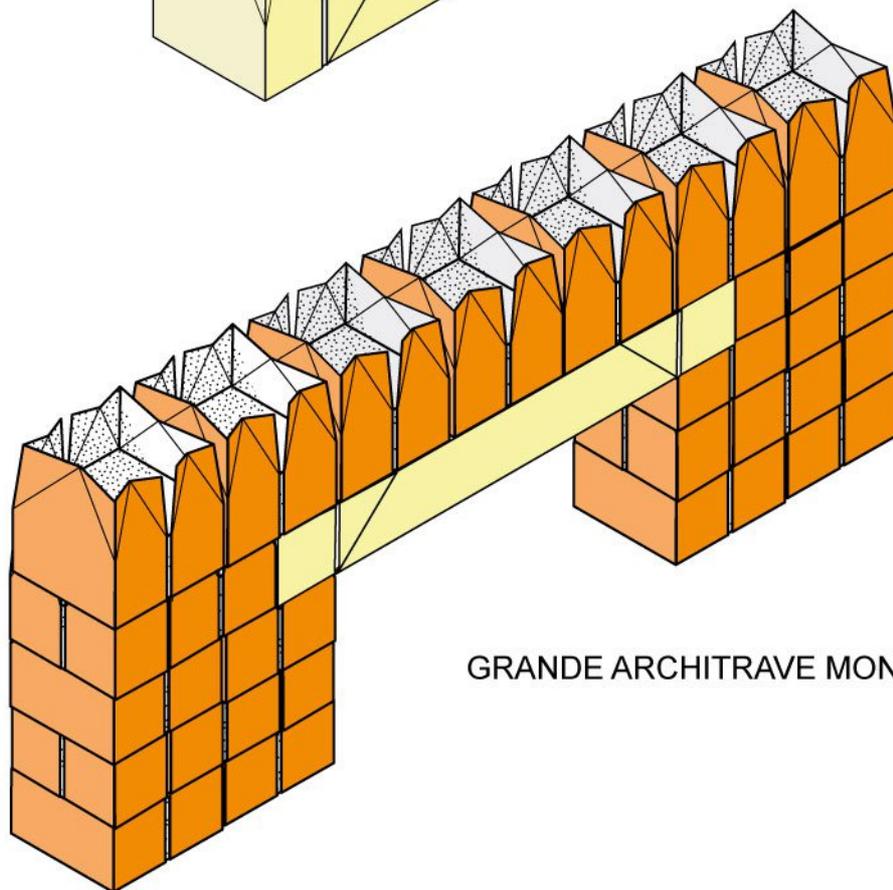
5

Restringete i perimetri superiori



6

Grande architrave ultimato



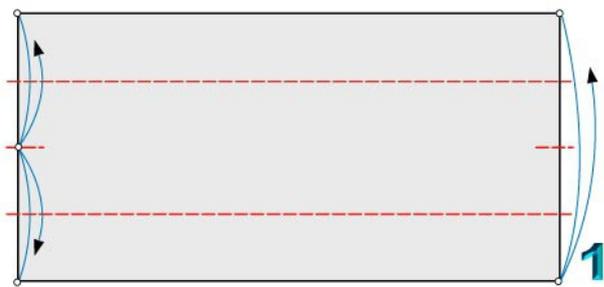
GRANDE ARCHITRAVE MONTATO

SIMPLIFIED ROOFTOP

This is a method to build a large structure in a very simple way.

As a result, we get a sufficiently rigid and resistant panel, joining several of them you can create a roof or a large floor plate.

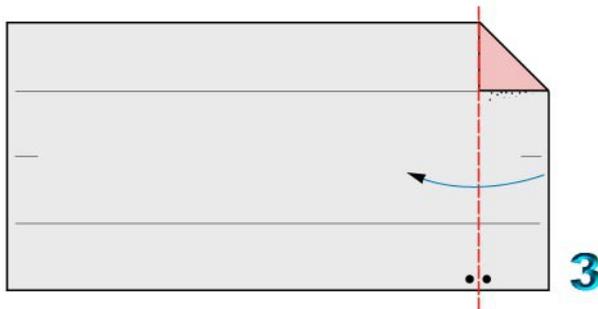
COSTRUZIONE DI UN MODULO



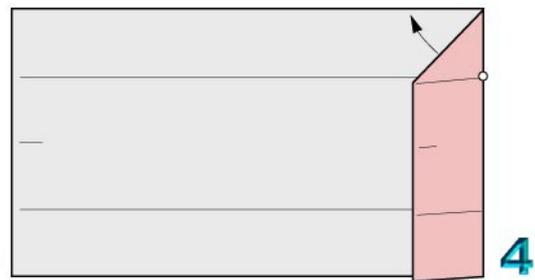
Eseguite prima le 2 piccole pieghe a valle centrali e poi le altre 2 longitudinali



1 piega a bisettrice a valle e ruotate



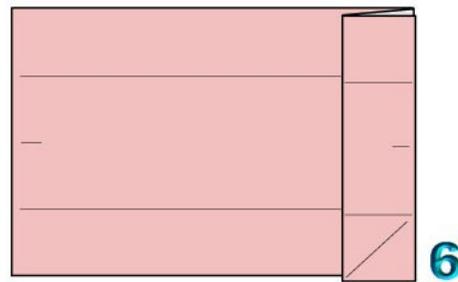
1 piega a valle e ruotate



Estraete il triangolo interno

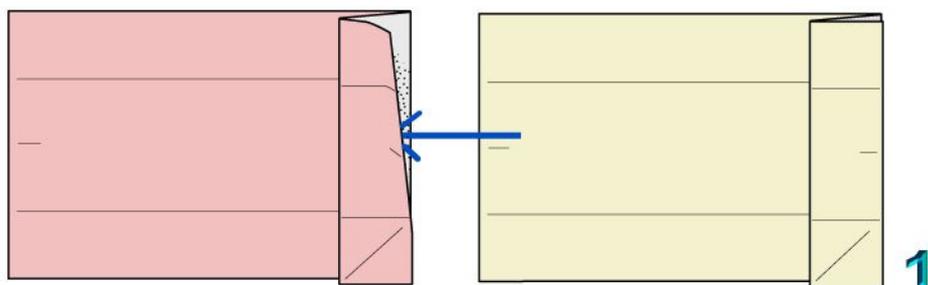


1 piega a monte, ruotate e ribaltate

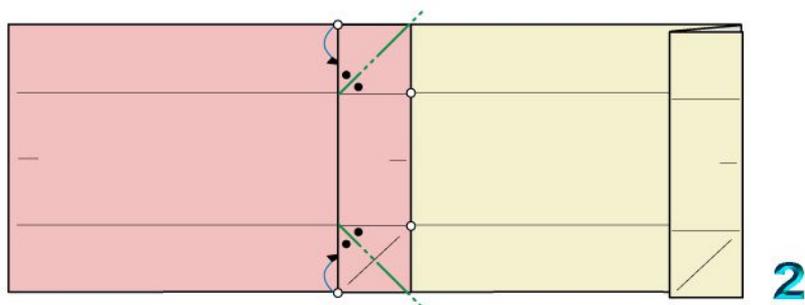


modulo ultimato

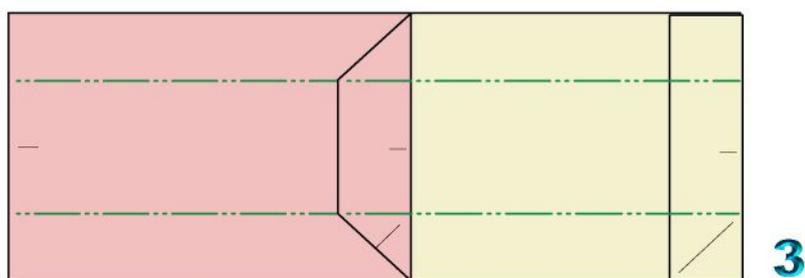
UNIONE DEI MODULI PER REALIZZARE UN PANNELLO SOLAIO O TETTO



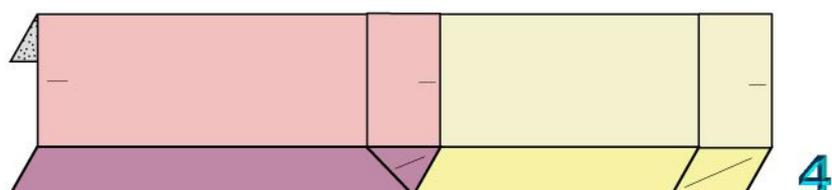
Intascate un modulo nell'altro



2 pieghe bisettrici a monte e ruotate bloccando l'unione



Ripiegando a monte modellate 3D



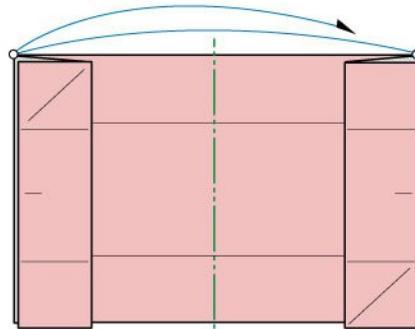
Unione di 2 moduli ultimata

COSTRUZIONE DI UN MODULO COLMO DI UN TETTO



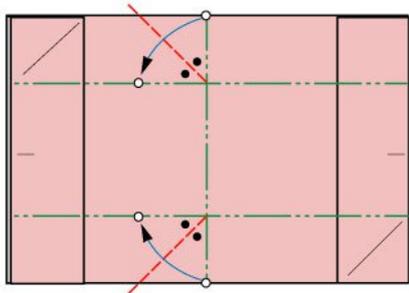
1

Partite dal modulo base e realizzate una tasca anche all'altra estremità



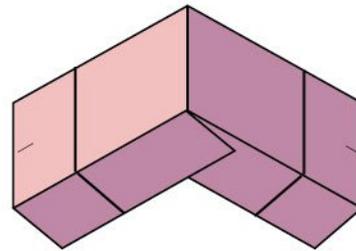
2

1 piega a monte e ruotate



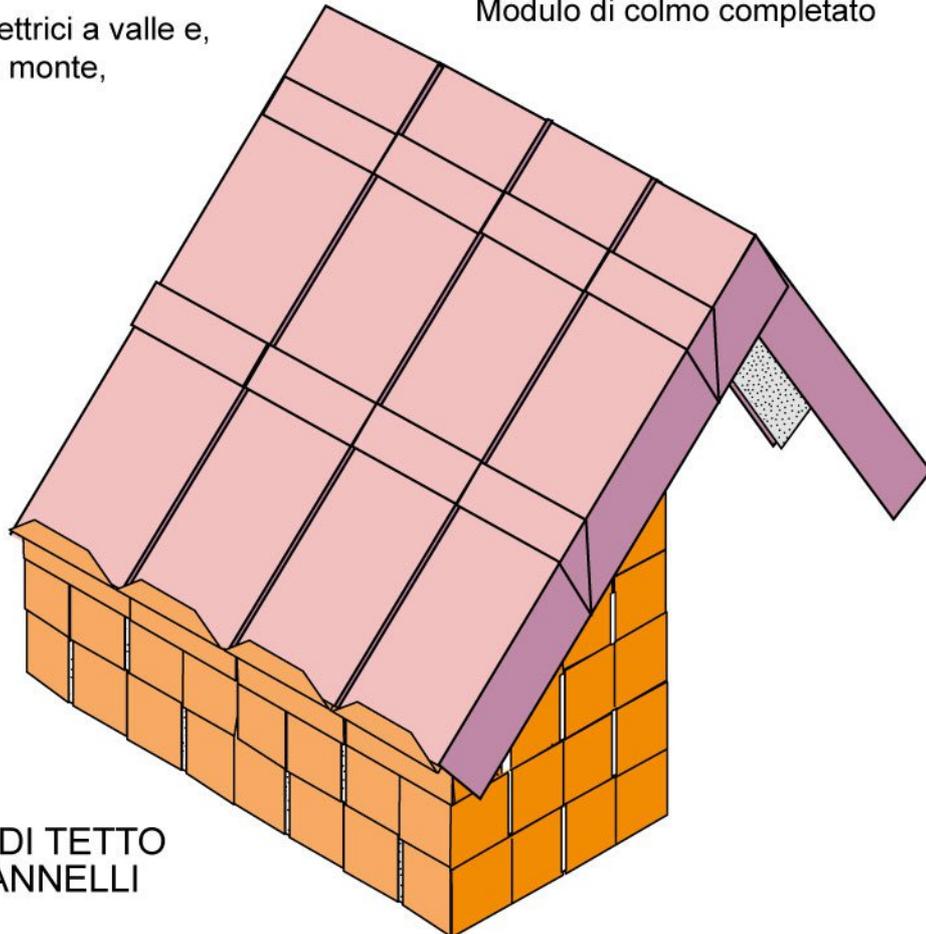
3

2 pieghe bisettrici a valle e, ripiegando a monte, ruotate 3D



4

Modulo di colmo completato



ESEMPIO DI TETTO
CON 4 PANNELLI



PROSPETTO SUD



PROSPETTO OVEST



PROSPETTO EST



PROSPETTO NORD

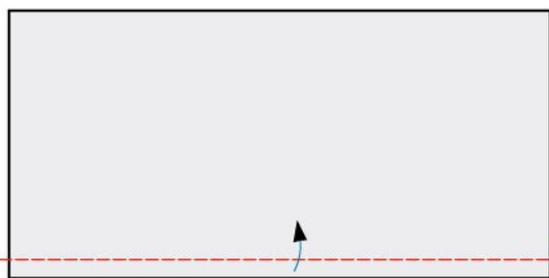
COLUMN

The column is a key architectural element of classical architecture used until a century ago in the construction of churches, mansions, and palaces. It consists of three elements: base, shaft, and capital.

One square sheet and three rectangular ones are needed for the shaft of the column.

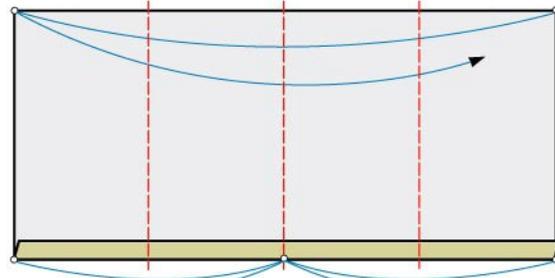
COSTRUZIONE DELLA BASE

Con un foglio rettangolare si costruisce uno scheletro centrale da incastrare in un modulo A1, precedentemente preparato



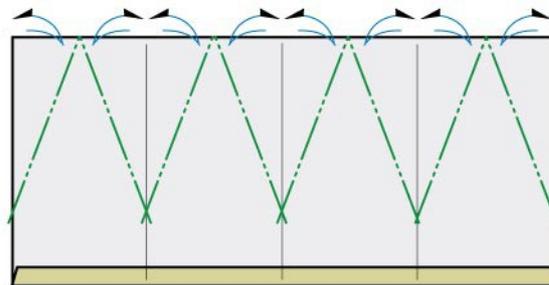
1

1 piega a valle e ruotate



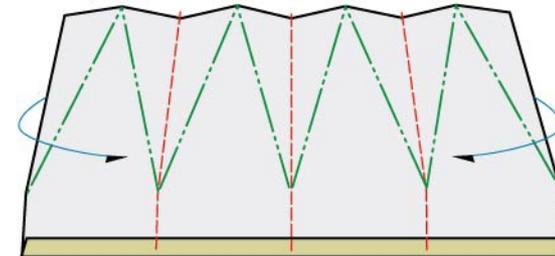
2

Eseguite prima la piega a valle centrale e poi le altre 2 trasversali



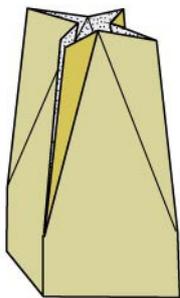
3

Eseguite 8 pieghe a monte in successione



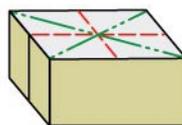
4

Ripiegando a valle ed a monte ruotate 3D

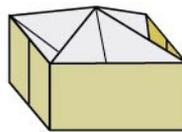


5

Questa specie di piramide, che farà da scheletro alla colonna, deve essere inserita in un modulo A1 modificato

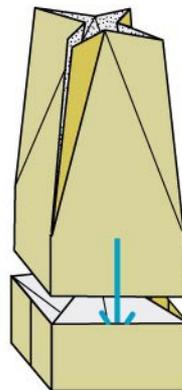


1



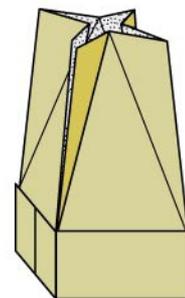
2

Prendete un modulo A1 e, mediante 2 pieghe a valle e 2 a monte sollevatene il centro



3

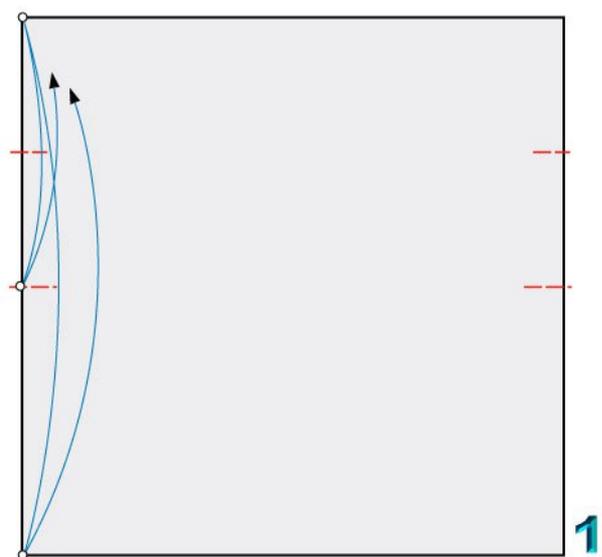
Inserite la specie di piramide nel modulo A1 modificato



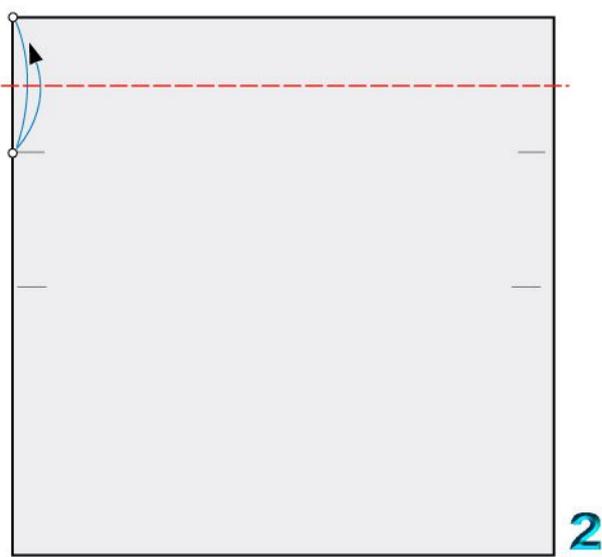
4

BASE della colonna ultimata

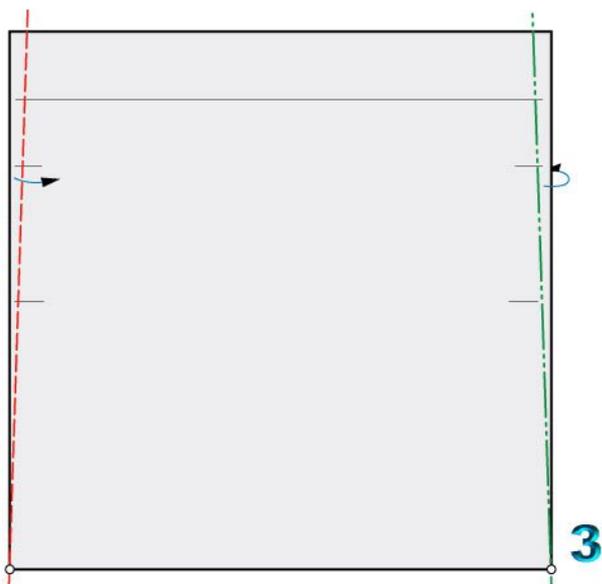
COSTRUZIONE DEL FUSTO



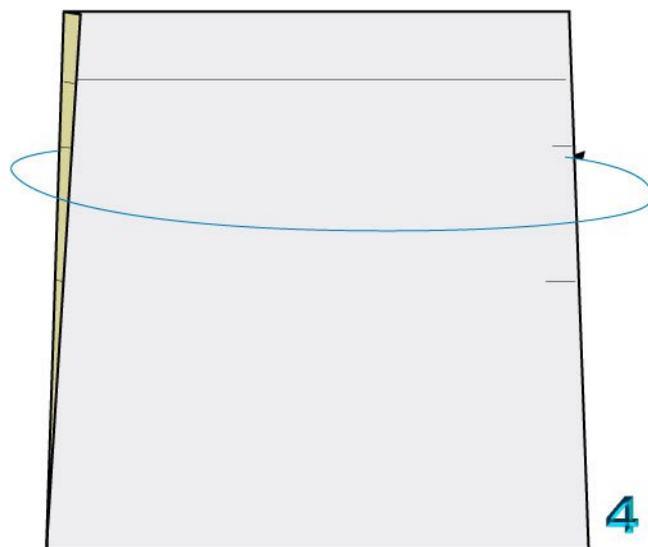
4 piccole a valle partendo da quelle centrali



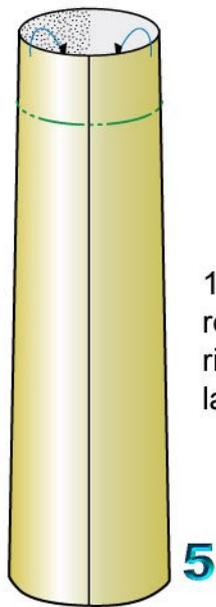
1 piega a valle



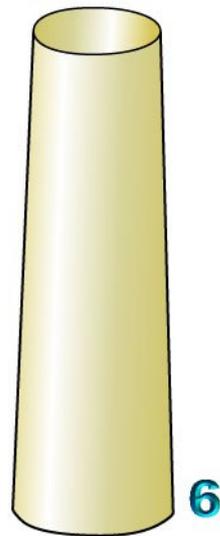
1 piega a valle ed una a monte



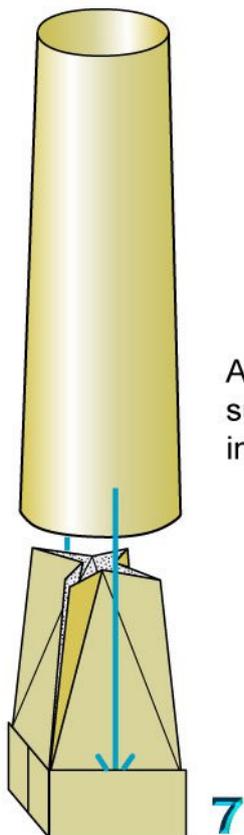
Ruotate agganciando



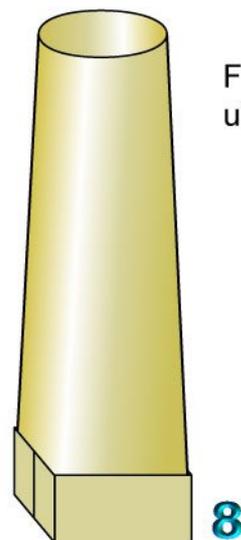
1 piega a monte,
rovesciate all'interno e
ribaltate per nascondere
la giunzione



Fusto ultimato

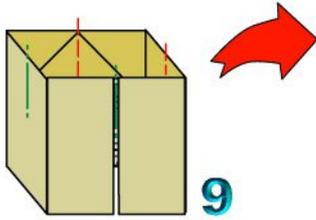


Avvolgendo il fusto
sullo scheletro
inserirlo nella base



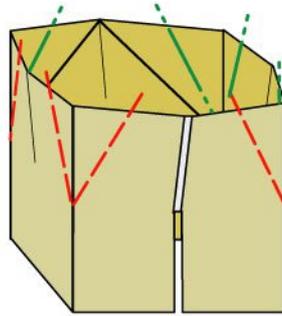
Fusto più basamento
ultimati

COSTRUZIONE DEL CAPITELLO



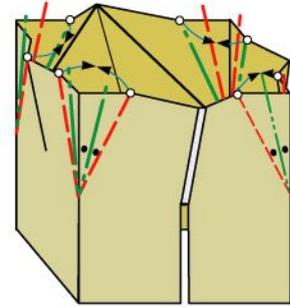
9

Partite da un modulo "A" rovesciato. Eseguite 1 piccola piega a monte al centro di ogni lato.



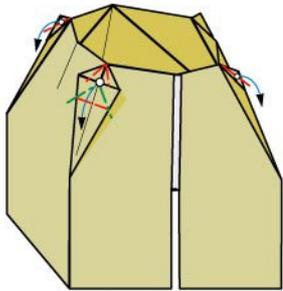
10

8 pieghe a valle, 2 per lato



11

8 pieghe bisettrici a monte, 2 per lato e ruotate ripiegando a valle.



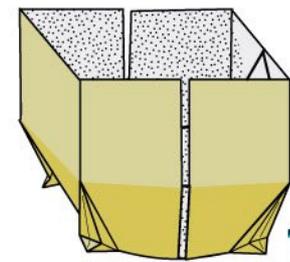
12

3 piccole pieghe a valle e 2 a monte per spigolo e ruotate



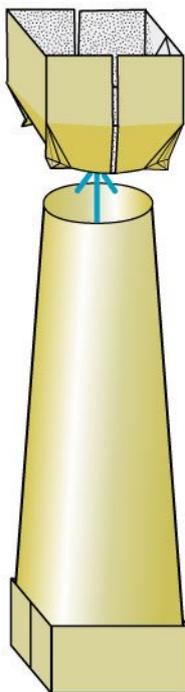
13

Ribaltate



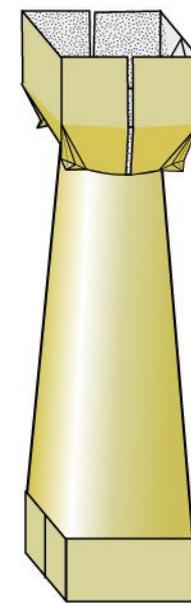
14

Capitello ultimato



Inserite il fusto con base nel capitello

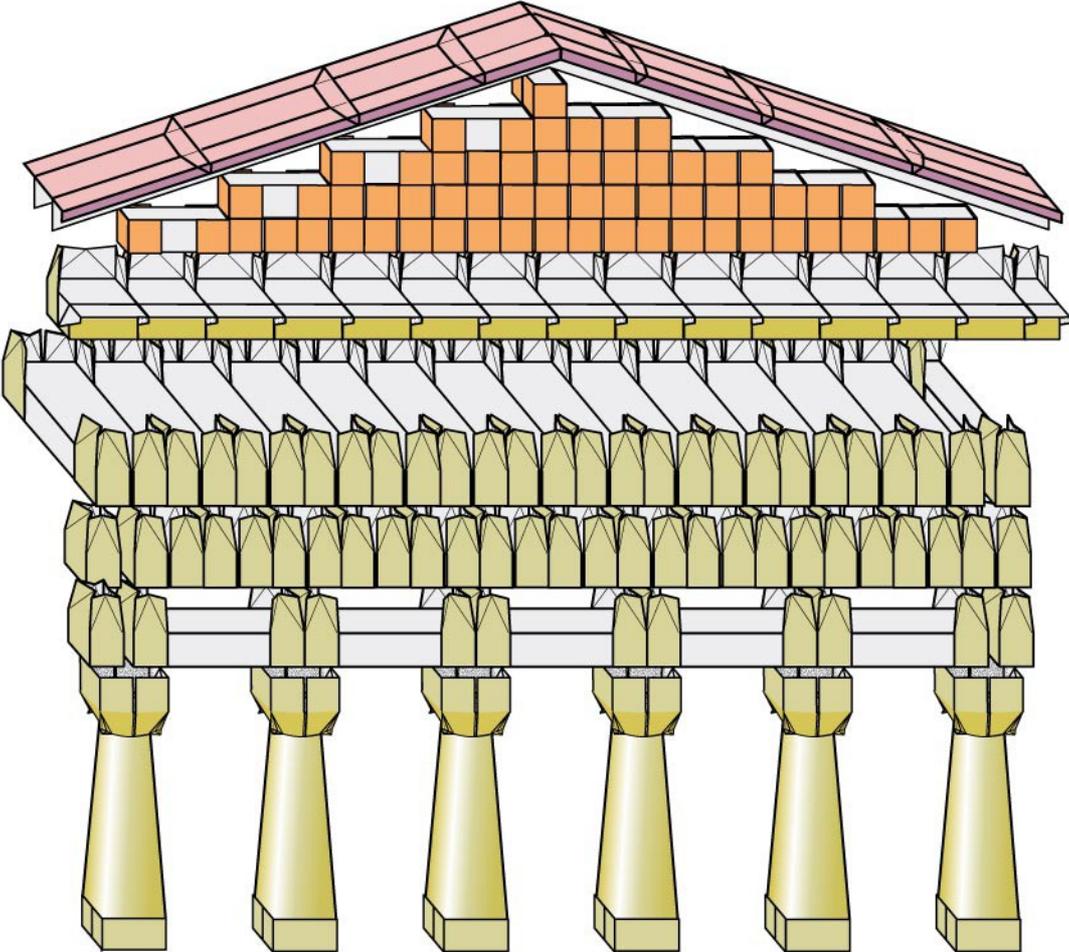
15

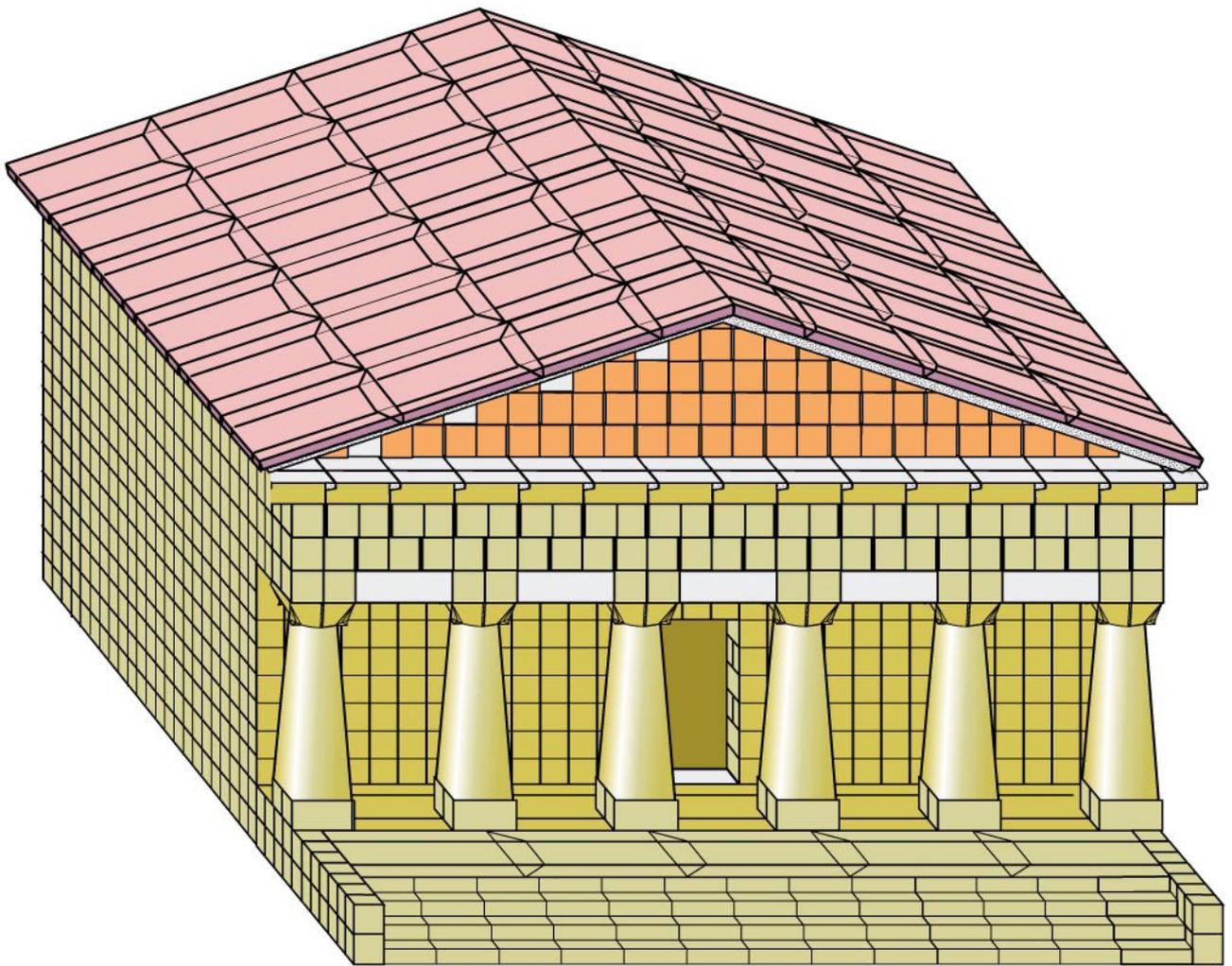


Colonna simil-corinzia ultimata

16

CONSTRUCTION OF A HEXASTYLE CORINTHIAN ROMAN TEMPLE - DISTYLE IN ANTIS





Roman temples differ from those of the ancient Greek by having steps on the front side only

CURVED WALLS

The circular towers gradually replace the square towers in response to the improvement of guns (XIV century).

In fact, a circular wall, though more difficult to build, provides increased resistance to battering rams and cannon balls and they can also deflect the shots that hit the target.

In civil architecture circular roofed spaces called exedras were incorporated by the Romans in their basilicas, which were public and court buildings.

Later exedras were used in the apses and the chapels of Romanesque churches.

The argument is developed in the chapters: -Curved bloch
-Curved half bloch
-Guards' wall walk



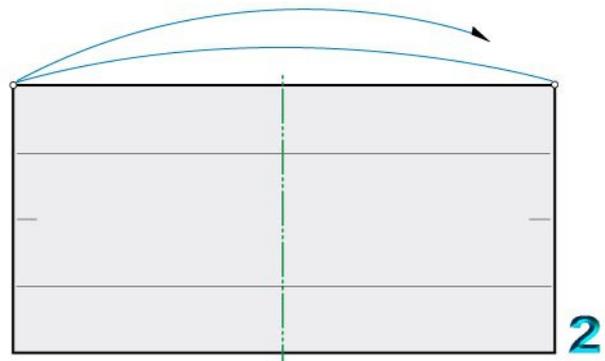
D1 - CURVED BLOCK

By modifying the basic block you get a block which is suitable to build circular towers or apses of churches. In the first case, it is also necessary to modify the guards' wall walk, in the second case it is necessary to develop an adequate system of coverage.

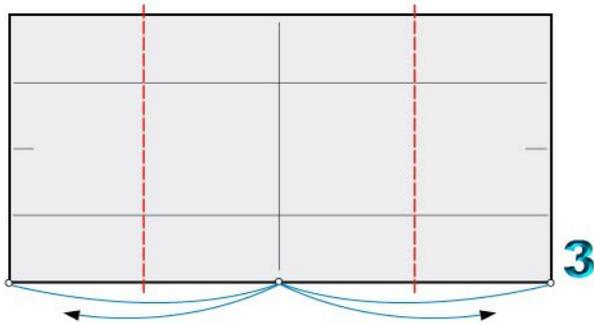
COSTRUZIONE DEL BLOCCO CURVO



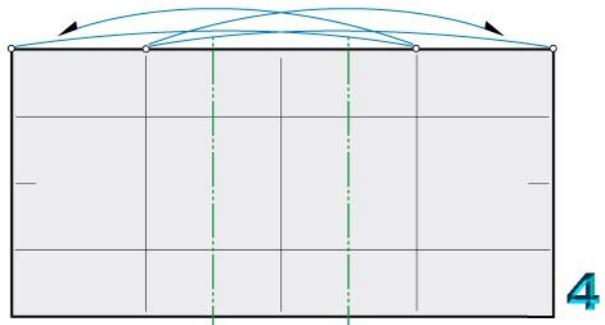
Eseguite prima le 2 piccole pieghe a valle centrali e poi le altre 2 longitudinali



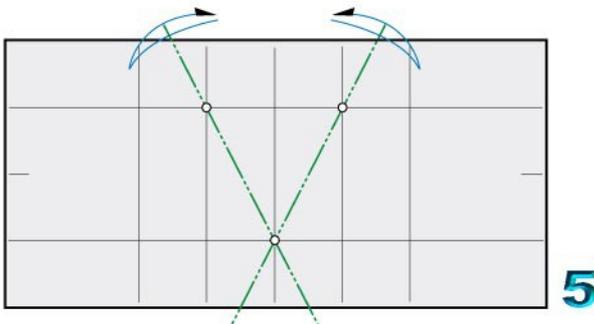
1 piega a monte



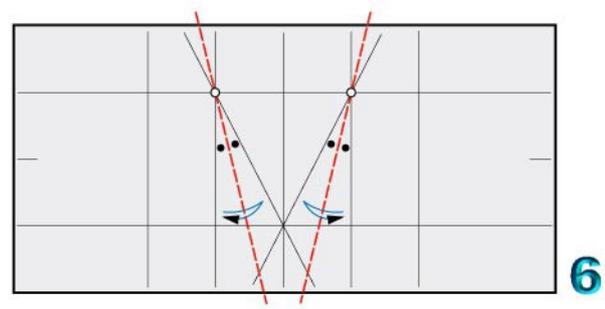
2 pieghe a valle



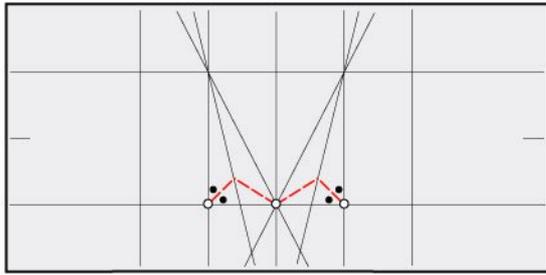
2 pieghe a monte



2 pieghe a monte. Queste, e quelle dei passaggi n. 6 e 7 costituiscono delle pre-piegature per condizionare la compattazione della carta di cui alla fig, n.17

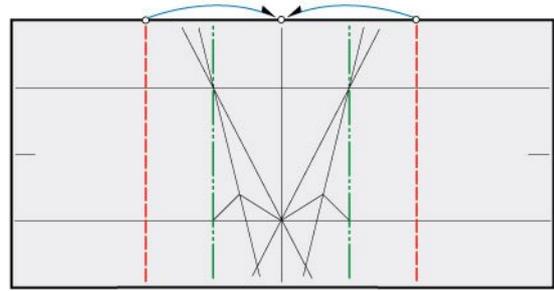


2 pieghe bisettrici a valle



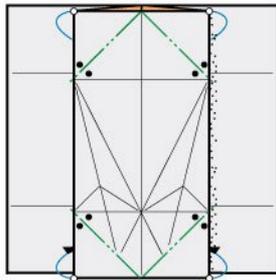
7

4 piccole pieghe a valle



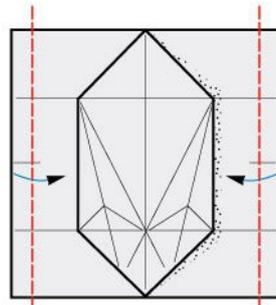
8

Ruotate ripiegando a valle ed a monte



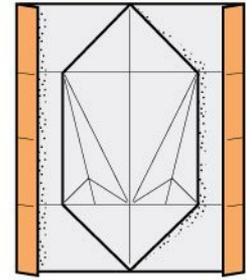
9

4 pieghe a monte e ruotate



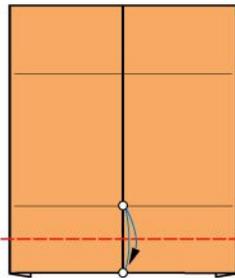
10

2 pieghe a valle e ruotate



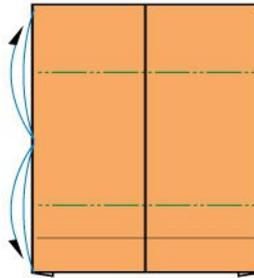
11

Ribaltate



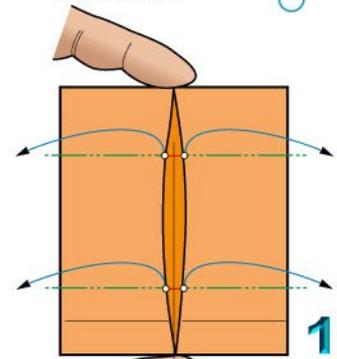
12

1 piega a valle



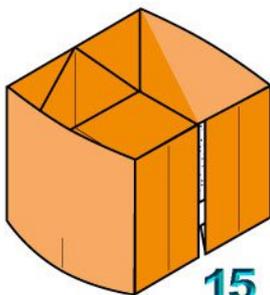
13

Ripiegate 2 volte a monte



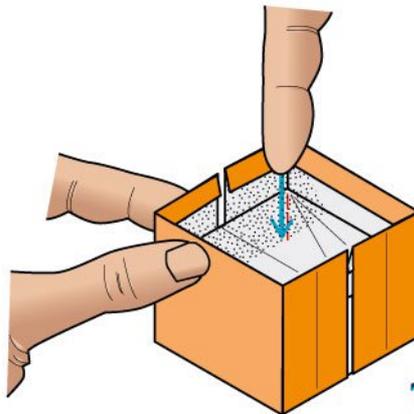
14

Ripiegando e comprimendo contemporaneamente, aprite modellando 3D



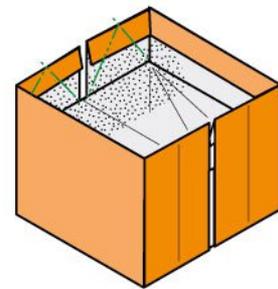
15

Ribaltate

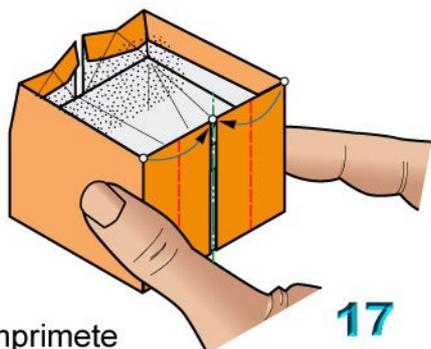


16

Comprimete gli spigoli e fate rientrare leggermente il fondo

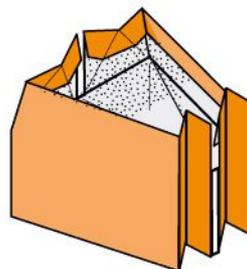


4 pieghe a monte



Comprimete
ripiegando a valle 2 volte

17

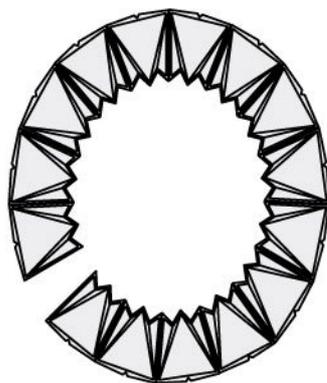
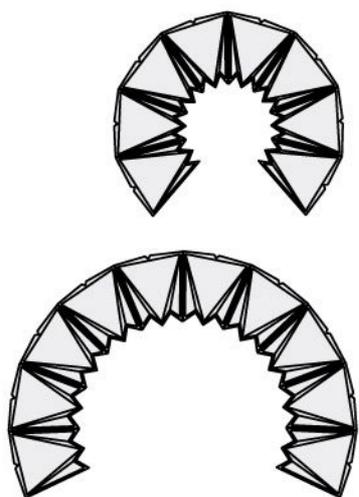
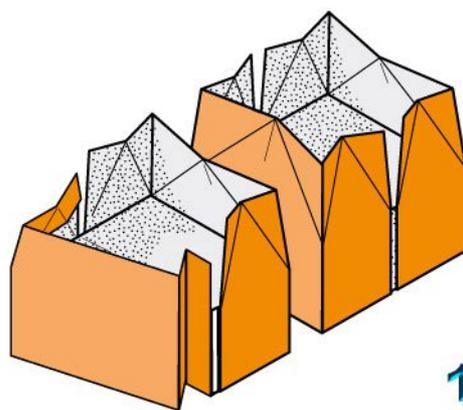
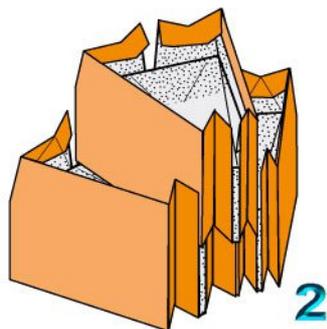
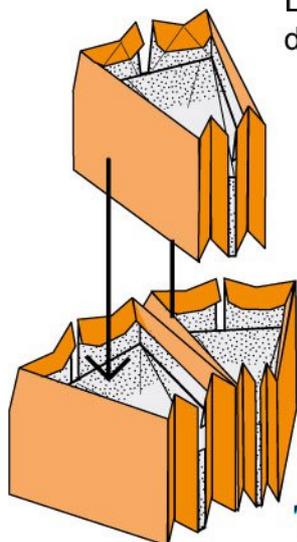


18

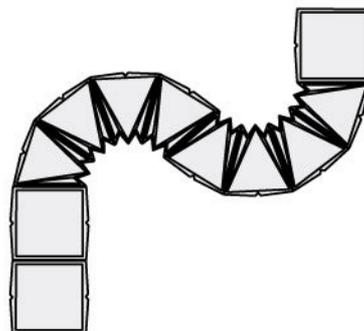
Blocco curvo ultimato

ESEMPIO DI UNIONE DI 3 BLOCCHI CURVI

L'incastro avviene in modo analogo a quello
dei blocchi "A"



Per eseguire un raccordo tra
un muro dritto ed uno curvo
modificate il blocco "A" solo
nella metà a contatto con
quest'ultimo



Variando la compressione del blocco si agisce sull'angolo formato dai fianchi; in questo modo si possono ottenere muri tondi, ellissoidali, raccordi con il blocco base "A" ecc.

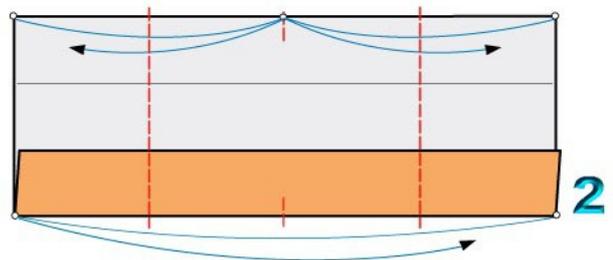
D2 - HALF SIZE CURVED BLOCK

This block is mainly used to build head walls or fenestrations.

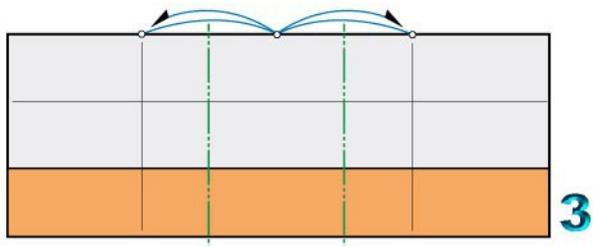
After reducing the width of the initial rectangle, the construction is similar to that of block A.



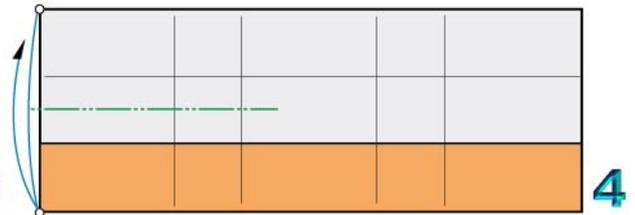
3 pieghe a valle e ruotate il bordo inferiore



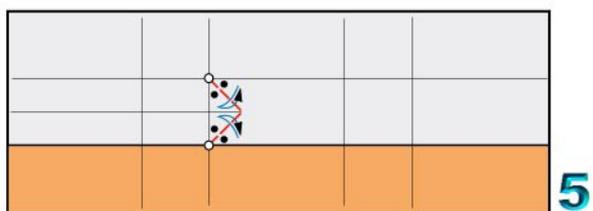
Eseguite prima le 2 piccole pieghe a valle centrali e poi le altre 2 trasversali



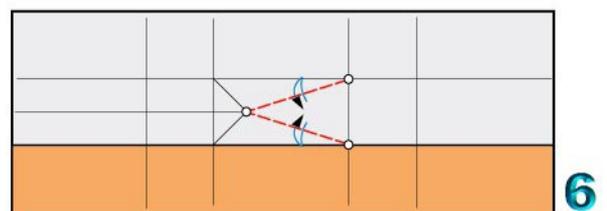
2 pieghe a monte



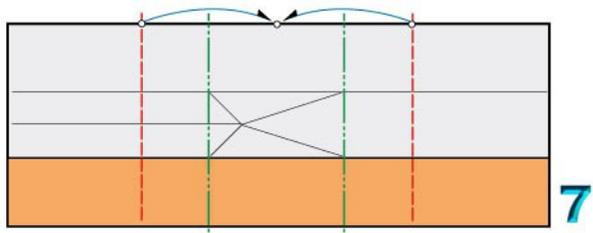
1 piega a monte



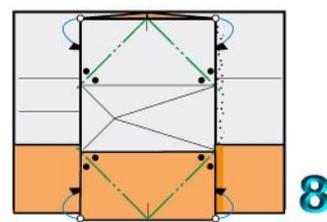
2 piccole pieghe bisettrici a valle



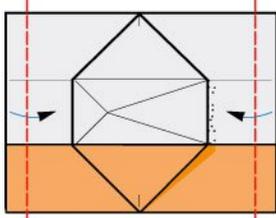
2 pieghe a valle



Ruotate ripiegando a valle ed a monte

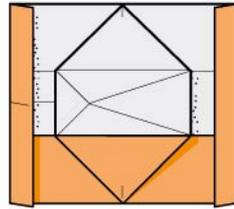


4 pieghe bisettrici a monte e ruotate



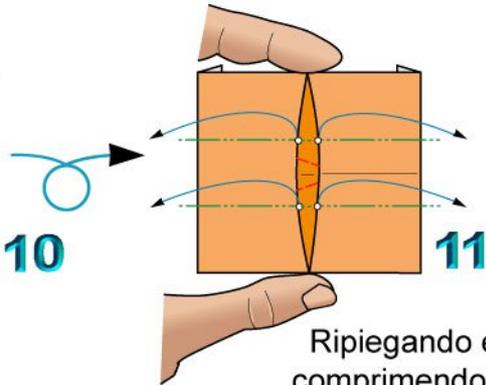
9

2 pieghe a valle e ruotate



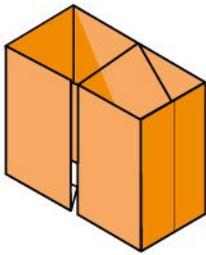
10

Ribaltate



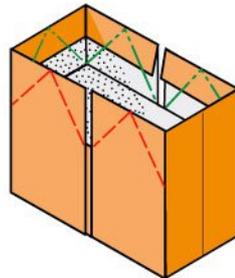
11

Ripiegando e comprimendo contemporaneamente, aprite modellando 3D



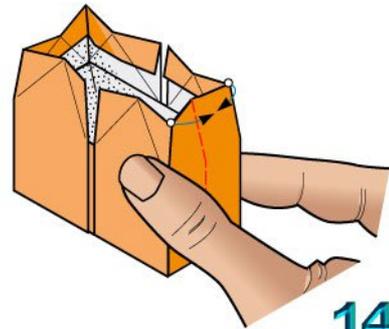
12

Ribaltate



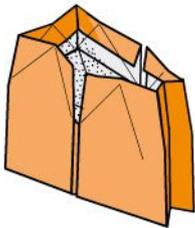
13

Diminuite il perimetro del bordo superiore



14

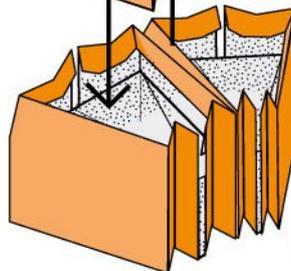
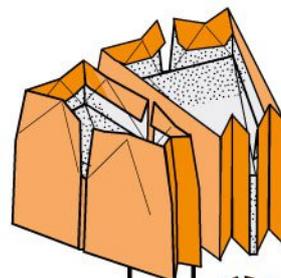
Comprimete



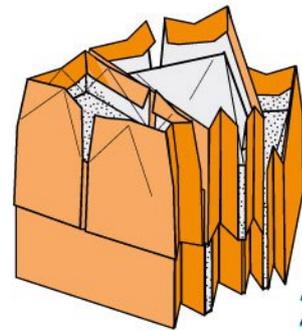
15

Semiblocco D2 ultimato

ESEMPIO DI MURO DI TESTA FORMATO DA 3 BLOCCHI D1 E 1 SEMIBLOCCO D2



1

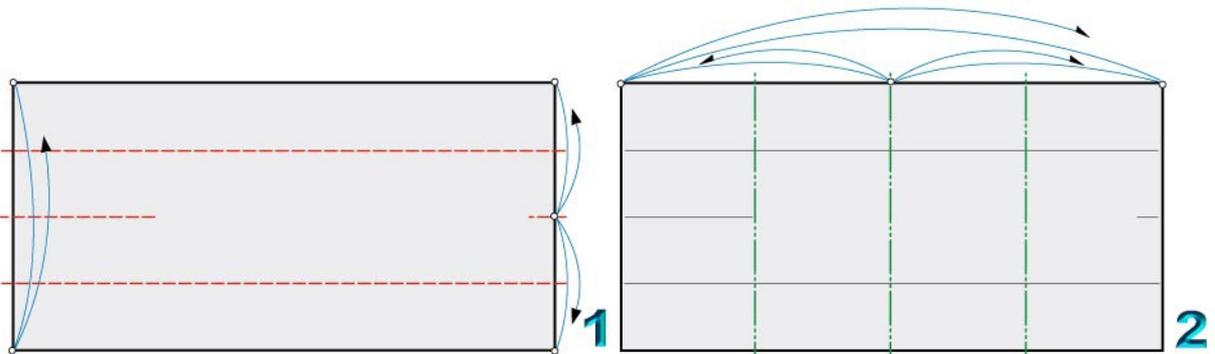


2

GUARDS' WALL WALK WITH MACHILOCATIONS ON CURVED WALLS

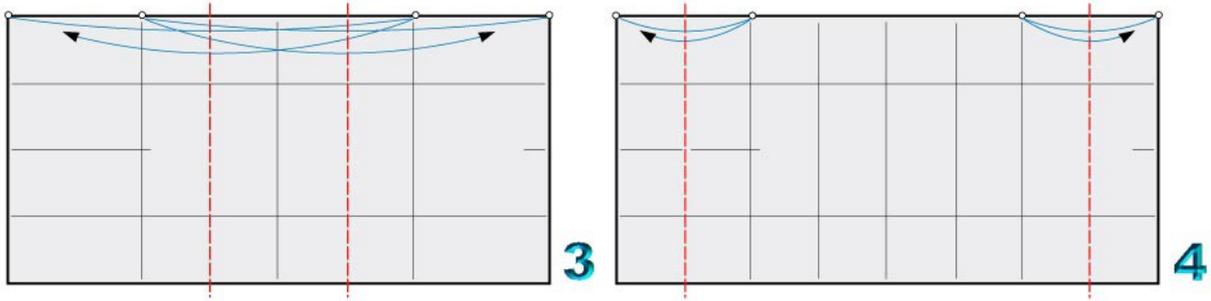
To do this, we must build 4 types of modules: basic blocks, half size basic blocks, parapet and covering element.

COSTRUZIONE DEL BLOCCO BASE



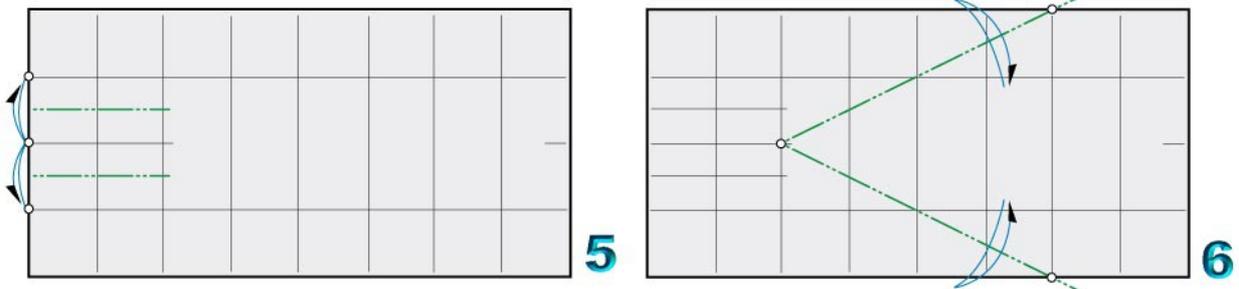
Eseguite prima le 2 piccole pieghe a valle centrali e poi le altre 2 longitudinali

3 pieghe a monte



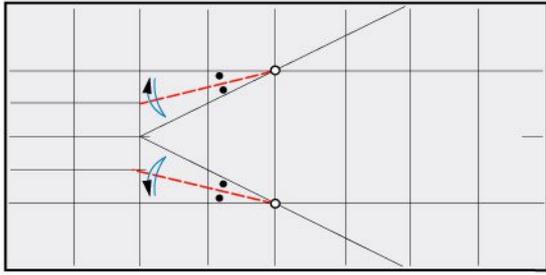
2 pieghe a valle

2 pieghe a valle



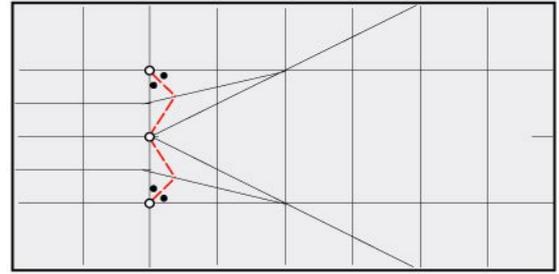
2 pieghe a monte

2 pieghe a monte



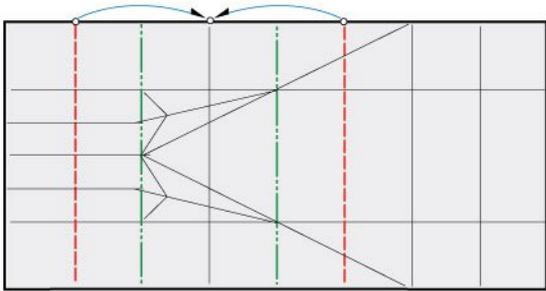
7

2 pieghe a valle



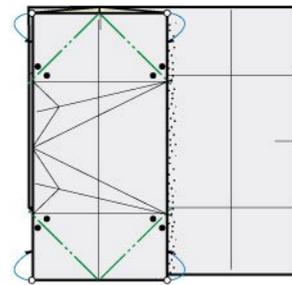
8

4 piccole pieghe a valle



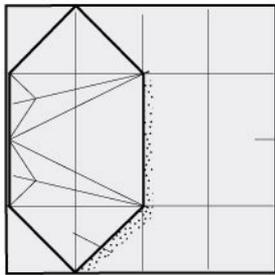
9

Ruotate ripiegando
a valle ed a monte



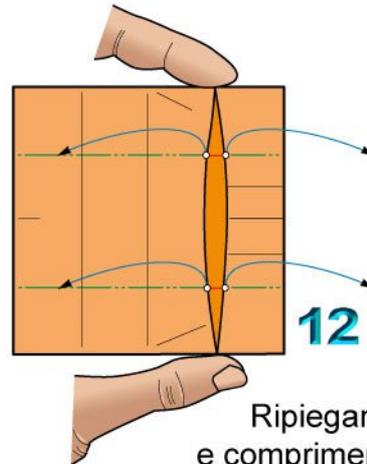
10

4 pieghe bisettrici a monte
e ruotate all'interno



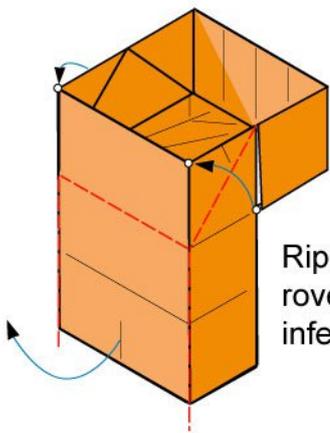
11

Ribaltate



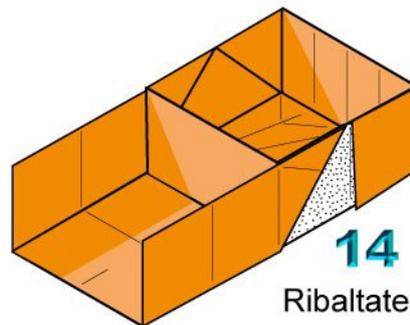
12

Ripiegando
e comprimendo
contemporaneamente,
aprite modellando 3D



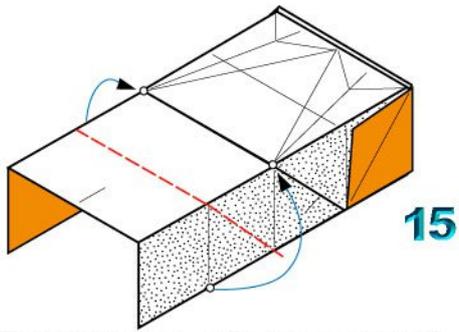
13

Ripiegando a valle
rovesciate il bordo
inferiore modellando
3D

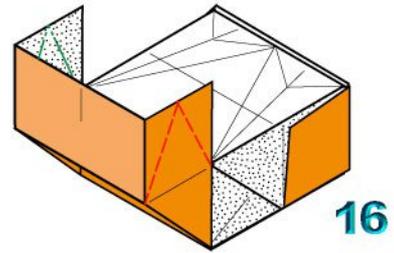


14

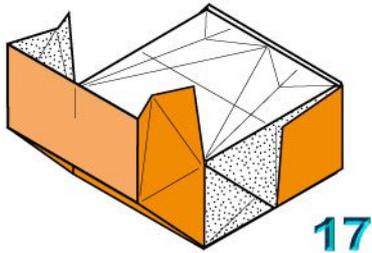
Ribaltate



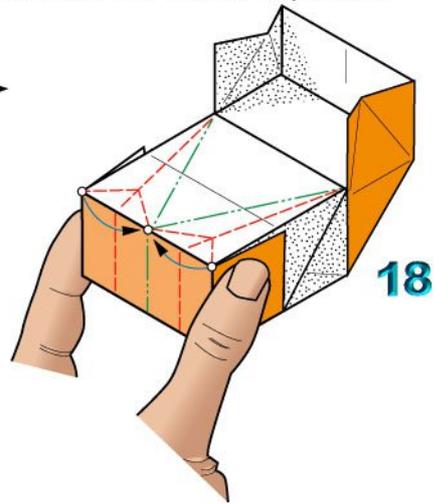
Ripiegando a valle rovesciate il bordo inferiore modellando 3D



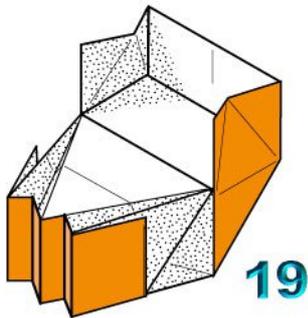
Con una serie di pieghe a valle restringete il perimetro del bordo superiore



Ribaltate



Comprimete facendo rientrare la carta in corrispondenza delle pieghe a valle

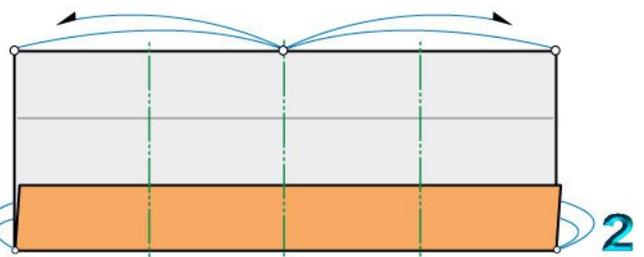


Blocco curvo ultimato

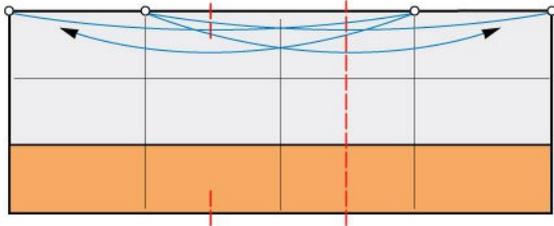
COSTRUZIONE DEL SEMIBLOCCO BASE



3 pieghe a valle e ruotate il bordo inferiore



3 pieghe a monte



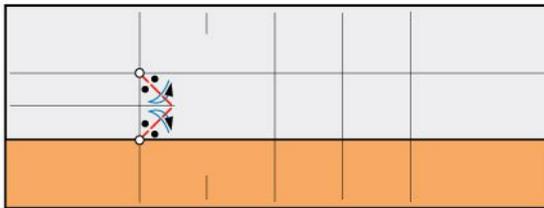
3

1 piega a valle e 2 piccole



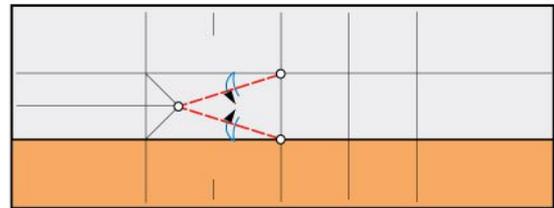
4

1 piega a valle



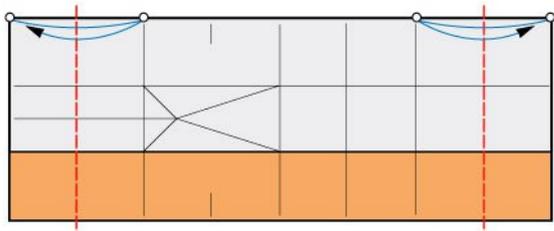
5

2 piccole pieghe bisettrici a valle



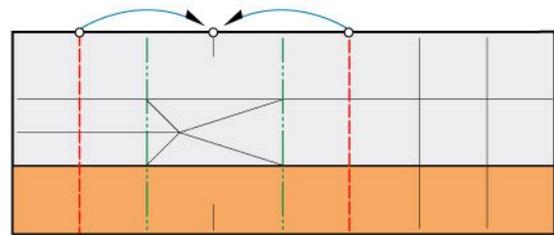
6

2 pieghe a valle



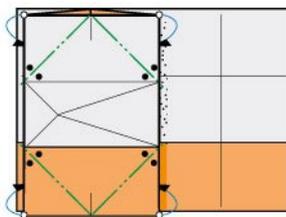
7

2 pieghe a valle



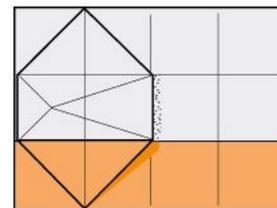
8

Ruotate ripiegando a valle ed a monte



9

4 pieghe bisettrici a monte e ruotate

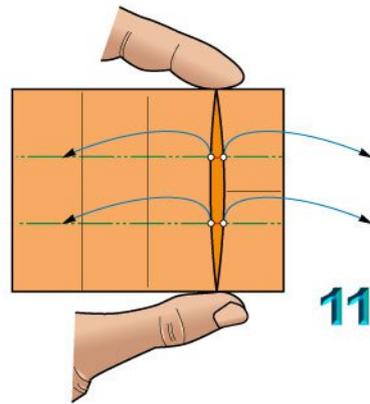


10

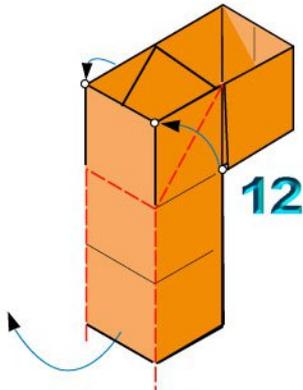
Ribaltate



Ripiegando e comprimendo contemporaneamente, aprite modellando 3D

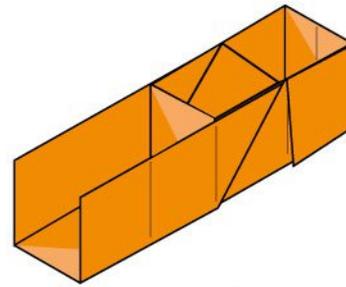


11



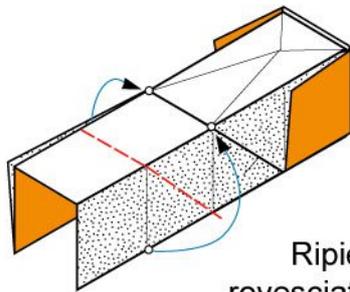
12

Ripiegando a valle rovesciate il bordo inferiore modellando 3D



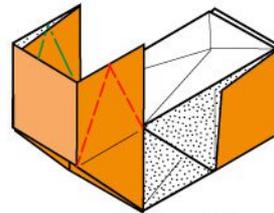
13

Ribaltate



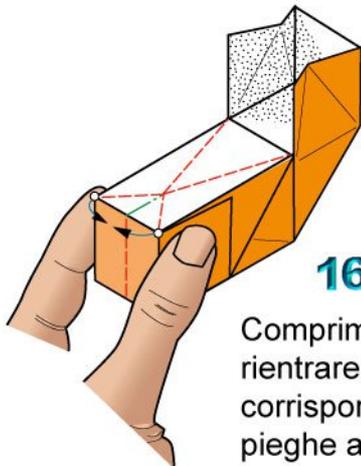
14

Ripiegando a valle rovesciate 3D il bordo indicato



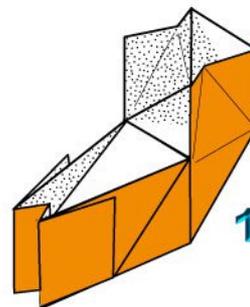
15

Ribaltate



16

Comprimete facendo rientrare la carta in corrispondenza delle pieghe a valle

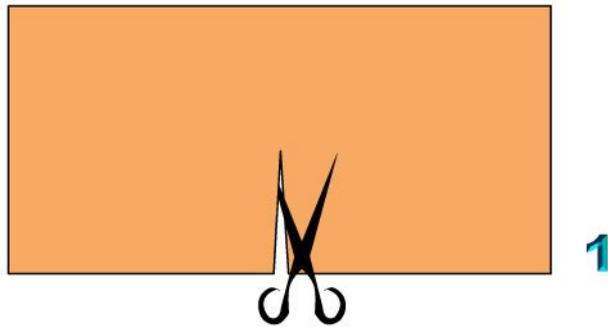


17

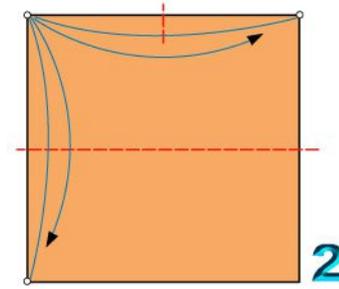
Blocco curvo per piombatoie ultimato

COSTRUZIONE DEL PARAPETTO

Dividete il quadrato base in 4 parti ugali

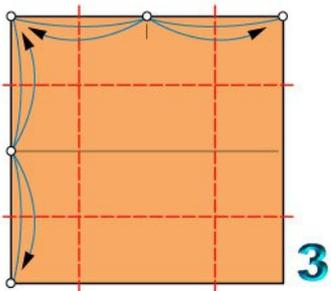


1



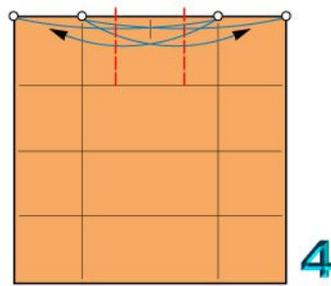
2

2 pieghe a valle, 1 grande ed 1 piccola



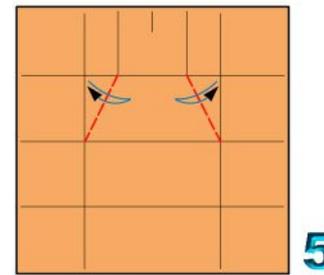
3

4 pieghe a valle



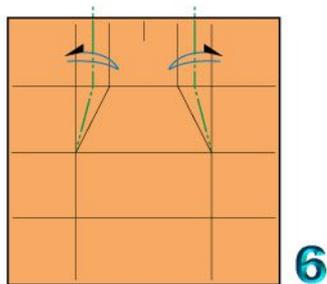
4

2 pieghe a valle



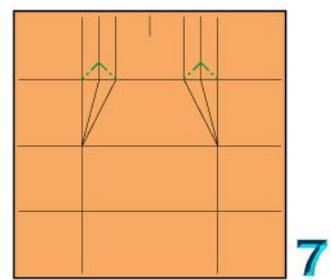
5

2 pieghe a valle



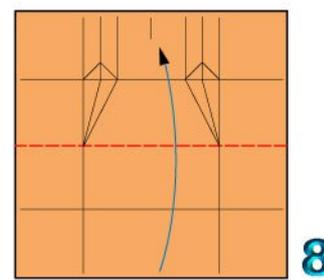
6

2 pieghe a monte



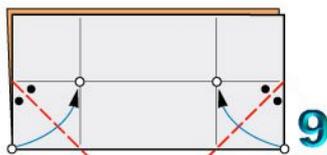
7

4 piccole pieghe a monte



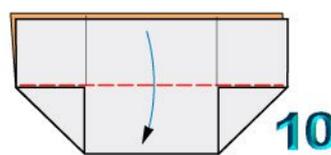
8

Ruotate ripiegando a valle



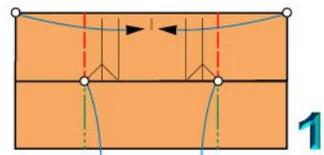
9

2 pieghe bisettrici a valle e ruotate



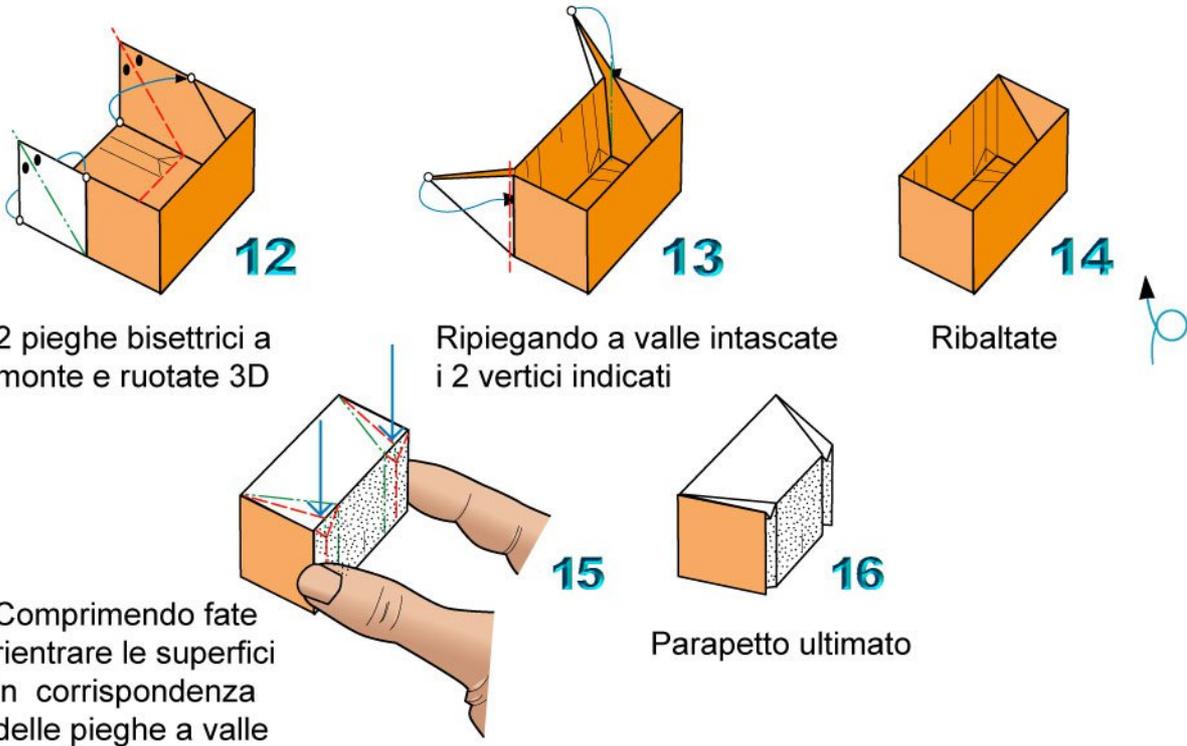
10

Ruotate ripiegando a valle

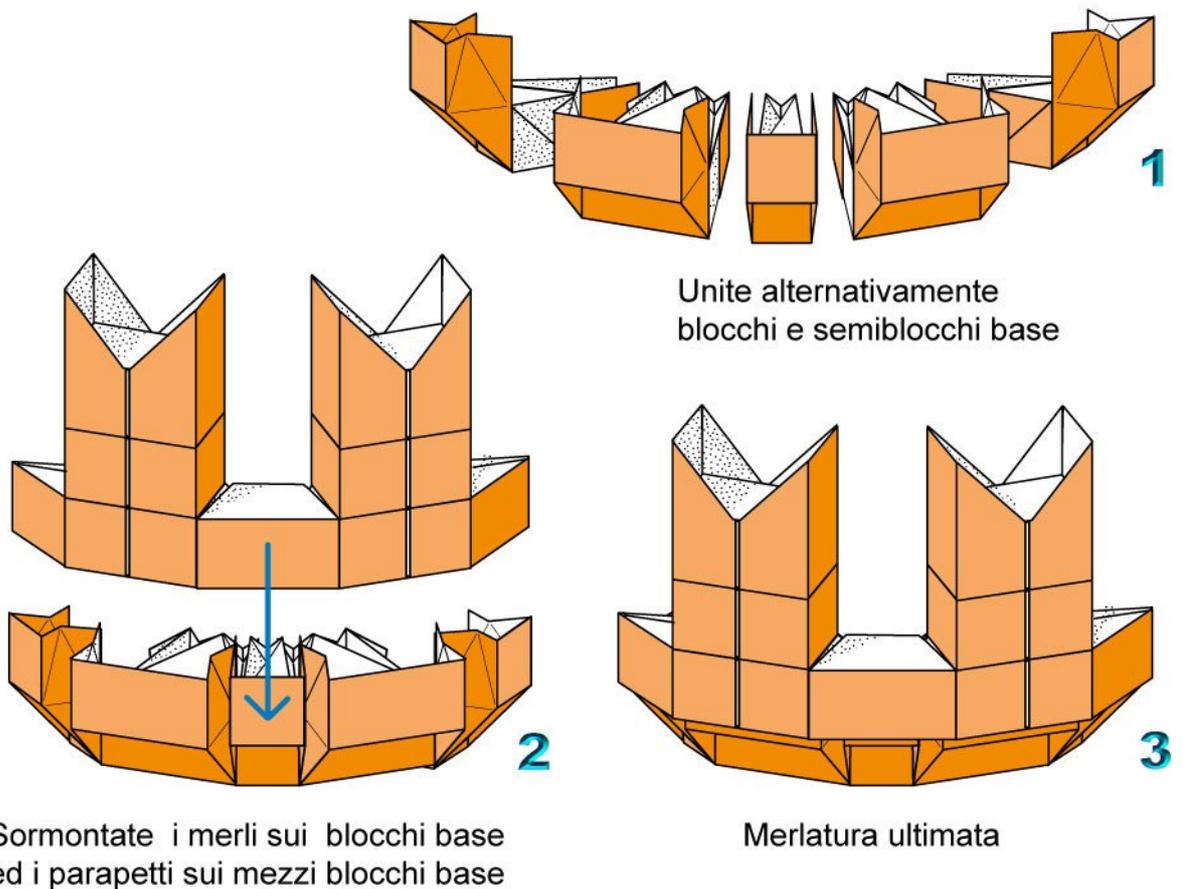


11

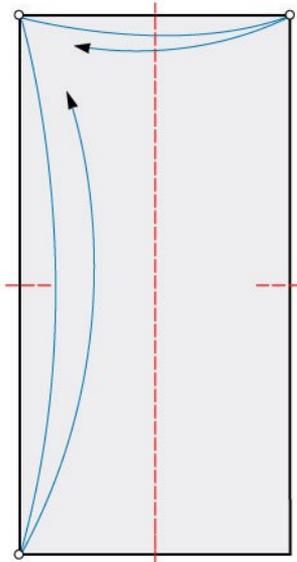
Ripiegando a valle ed a monte ruotate 3D



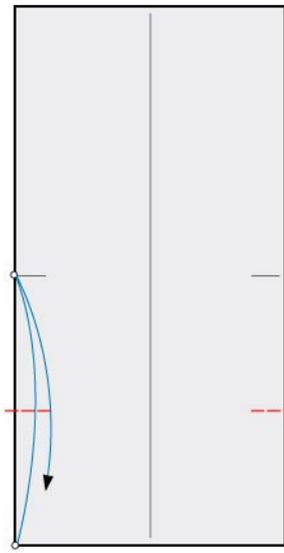
COSTRUZIONE DELLA MERLATURA CURVA



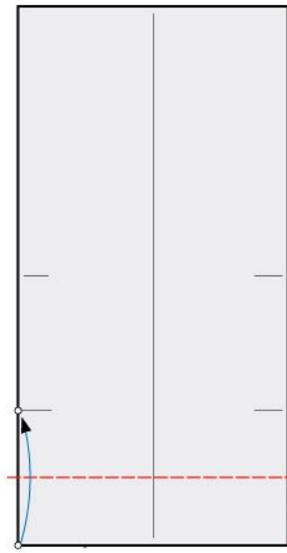
COSTRUZIONE DELL' ELEMENTO DI COPERTURA



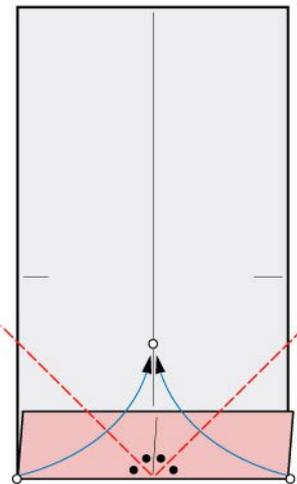
3 pieghe a valle, 2 piccole **1**



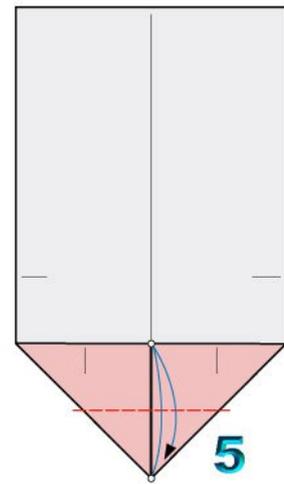
2 piccole pieghe a valle **2**



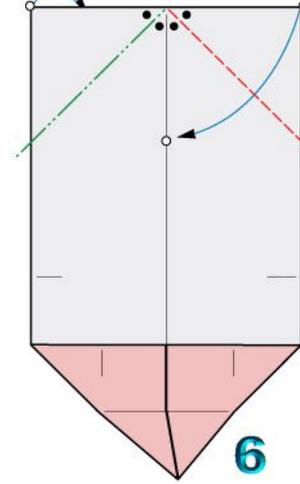
1 piega a valle e ruotate **3**



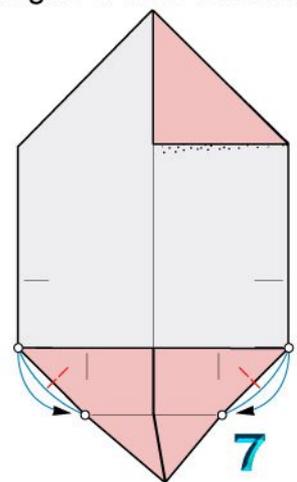
2 pieghe a valle e ruotate **4**



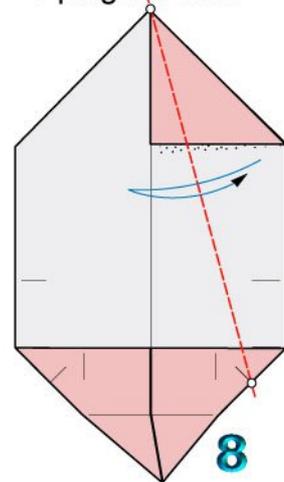
1 piega a valle **5**



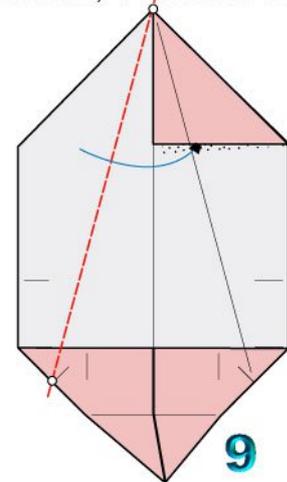
1 piega a valle, 1 a monte e ruotate **6**



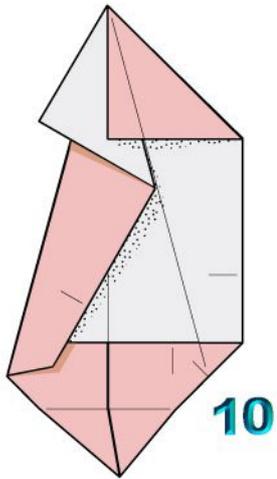
2 piccole pieghe a valle **7**



1 piega a valle **8**

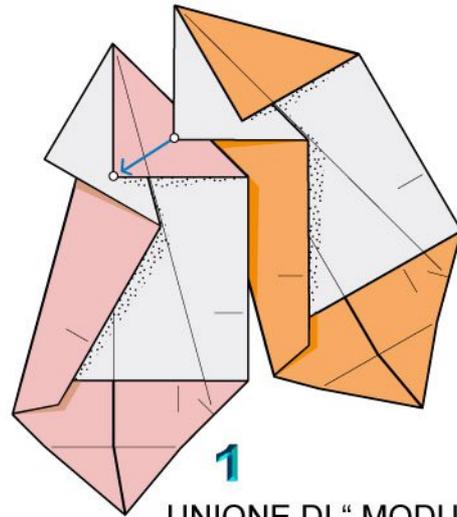


1 piega a valle ed intascate **9**



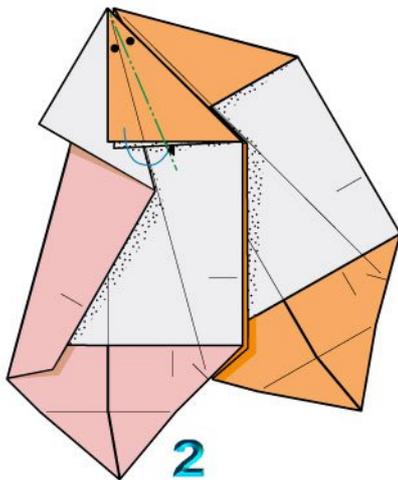
10

Modulo ultimato



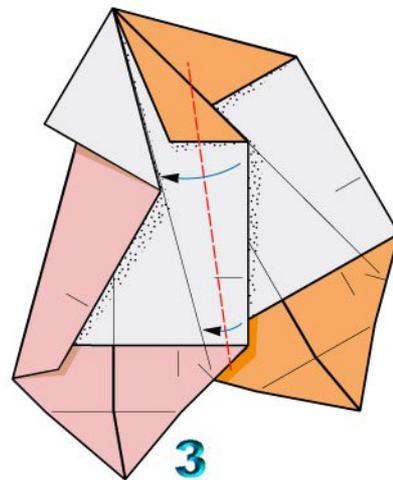
1

UNIONE DI "MODULI:
inserite uno nell'altro



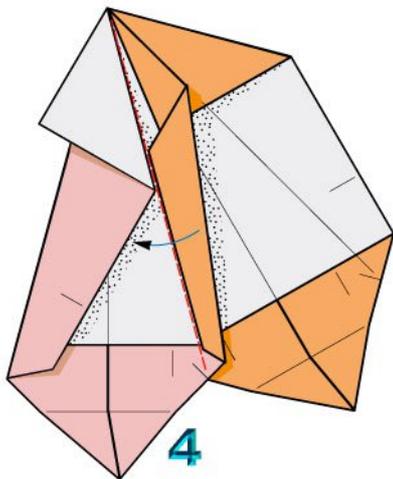
2

Piegate a monte e ruotate



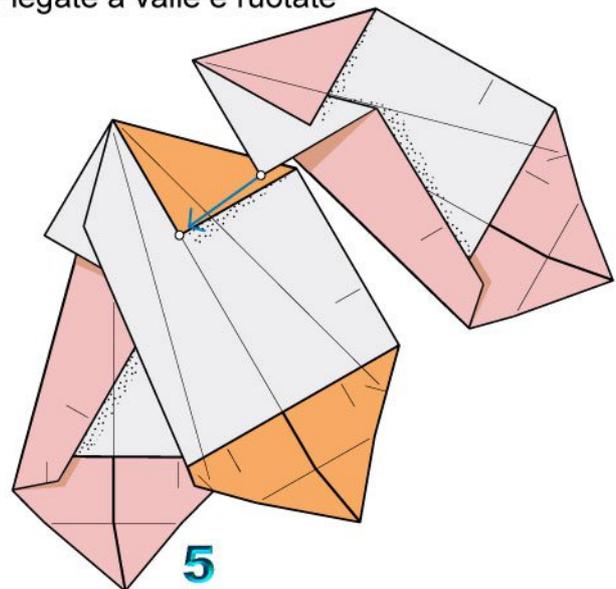
3

Piegate a valle e ruotate



4

Ripiegando a valle ruotate

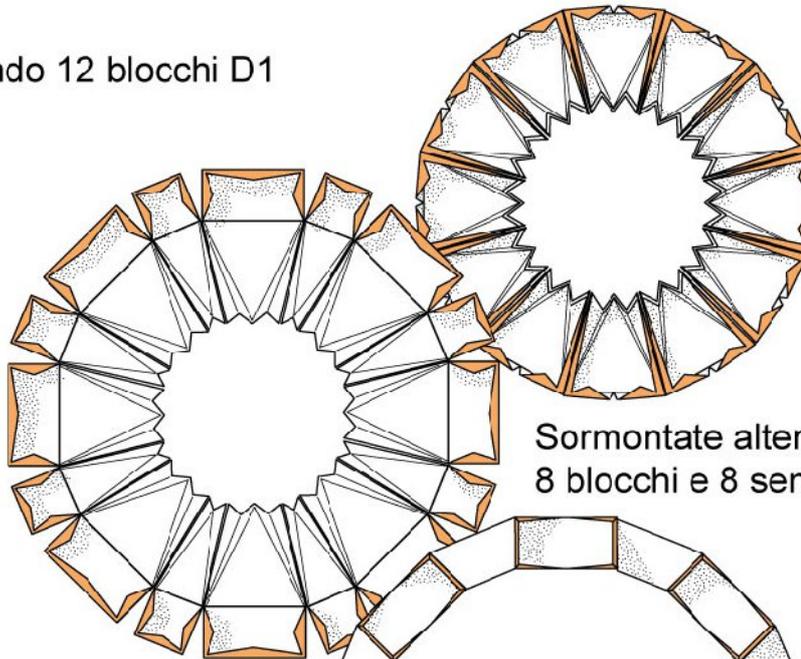


5

Ripetete l'operazione con un'altro modulo

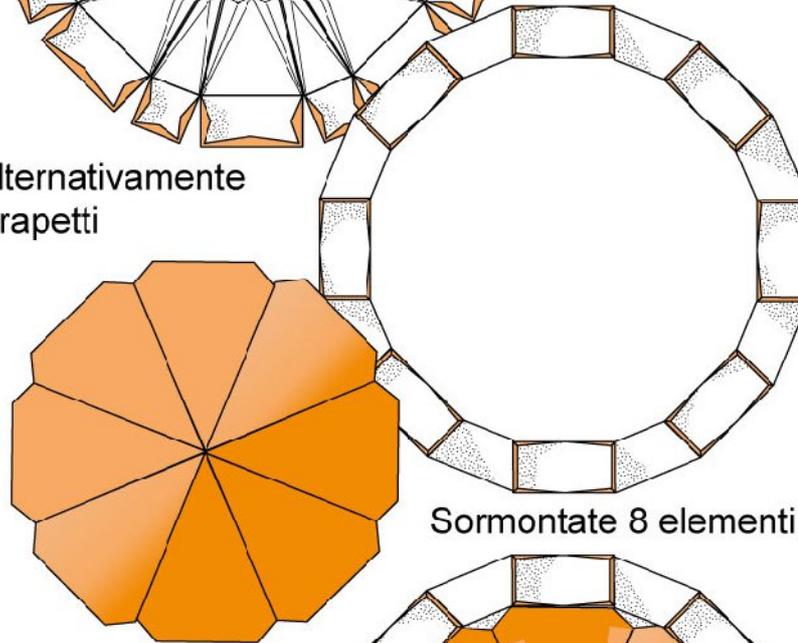
COSTRUZIONE DI UNA TORRE ESADECAGONALE

Partite unendo 12 blocchi D1

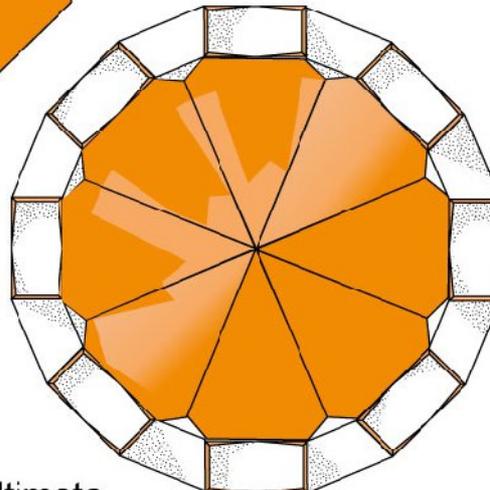


Sormontate alternativamente
8 blocchi e 8 semiblocchi base

Sormontate alternativamente
8 merli e 8 parapetti



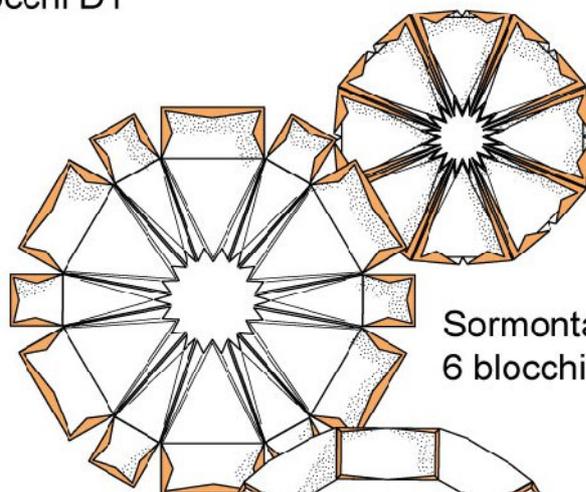
Sormontate 8 elementi di copertura



Pianta di torre esadecagonale ultimata

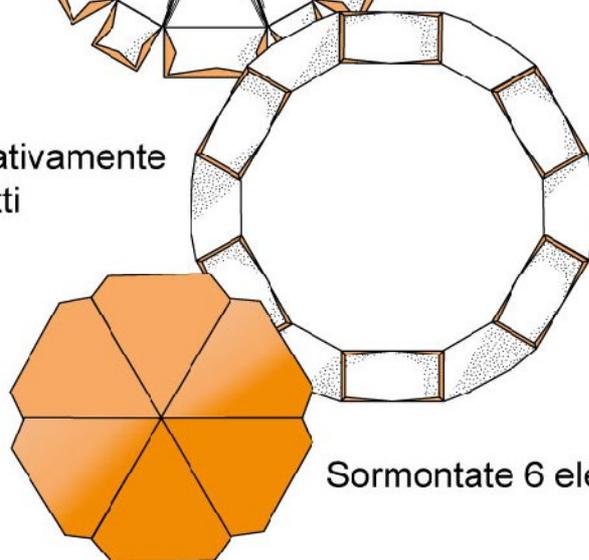
COSTRUZIONE DI UNA TORRE DODECAGONALE

Partite unendo 8 blocchi D1

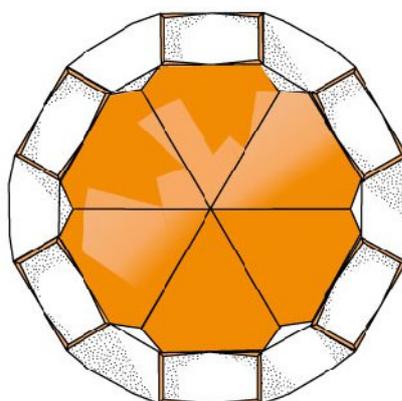


Sormontate alternativamente
6 blocchi e 6 semiblocchi base

Sormontate alternativamente
6 merli e 6 parapetti



Sormontate 6 elementi di copertura



Pianta di torre dodecagonale ultimata

FASI DI COSTRUZIONE DI UNA TORRE TONDA



1



2



3

CONTEMPORARY ARCHITECTURE

Contemporary architecture is structurally and substantially different from the classical and gothic one which is based on arches and domes supported by solid brick or stone walls.

Modern architecture is generally based on reinforced concrete and steel forming light structures with architraves so that the walls have lost their original function of load bearing, to such an extent that dividing walls can even be made of glass.

Concrete is a composite material made of two components: aggregate (sand and gravel) bonded with wet cement that hardens over time.

The Romans used pozzolanic ash as a binder. Nowadays cement is a mixture of limestone and clay baked in kilns at high temperatures to form quicklime (CaO) and ground into a powder.

The aggregate, gravel, chipping and river sand, prevents the mixture from shrinking when the concrete dries up and hardens.

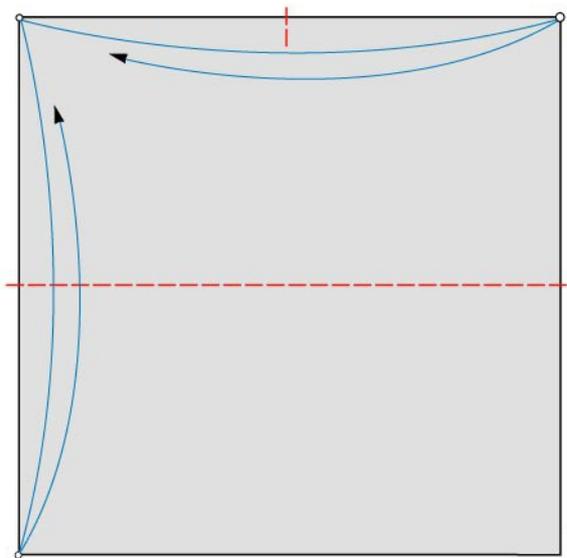
Steel bars or steel mesh are placed inside moulds before the fluid concrete is poured onto them to dry into rock-solid beams and pilasters, all "moored" to each other in a skeleton of columns and beams called "concrete frame".

Steel is used also to erect flat or spatial structures such as pylons and cantilevered bridges.

In the next pages, we will make origami buildings using contemporary construction techniques, so we are not going to use blocks to build walls but we will construct skeletons made of columns and beams where light dividing walls can be inserted to close and delimit spaces.

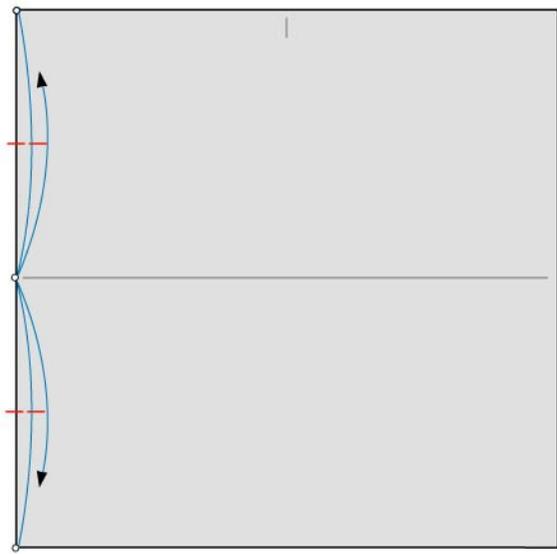
RECTANGULAR BASE PILASTER

To build this pilaster you must use strong paper or light cardboard. For the villa in the picture, I have used 8x8 cm square sheets.



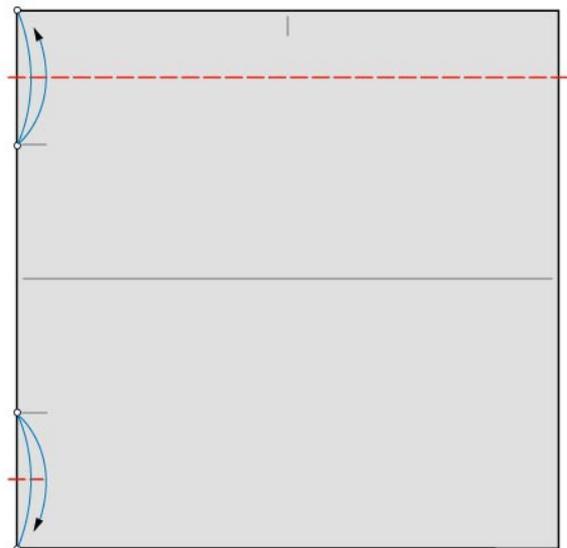
1

1 piega a valle orizzontale ed
1 piccola verticale



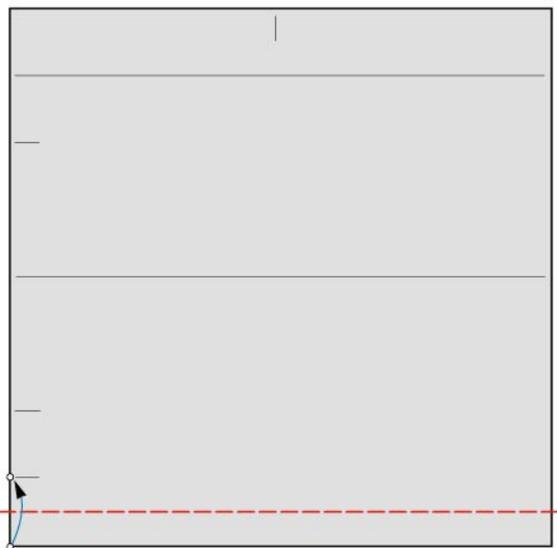
2

2 piccole pieghe a valle orizzontali



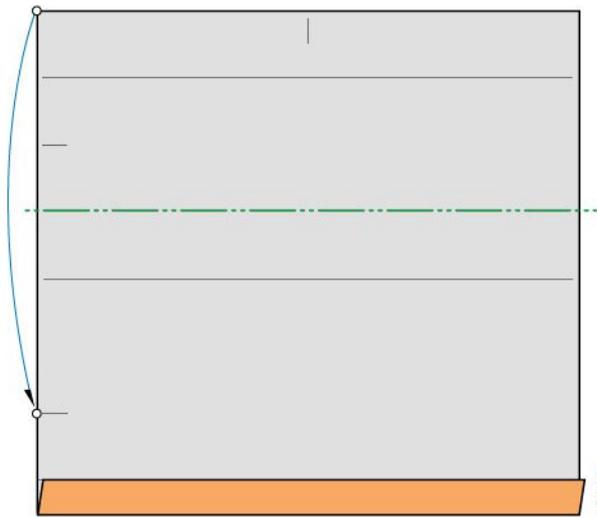
3

2 pieghe a valle orizzontali,
di cui 1 piccola

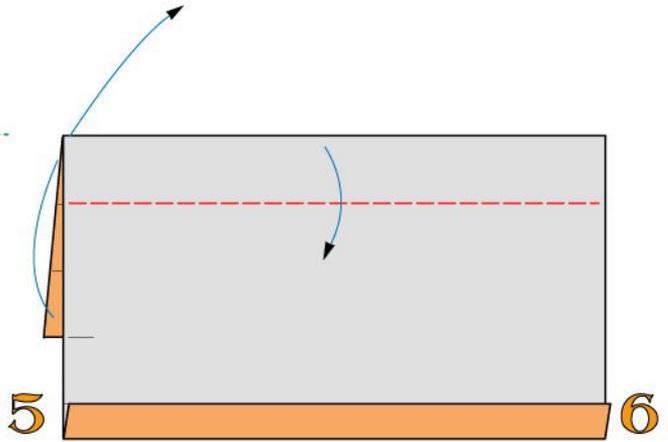


4

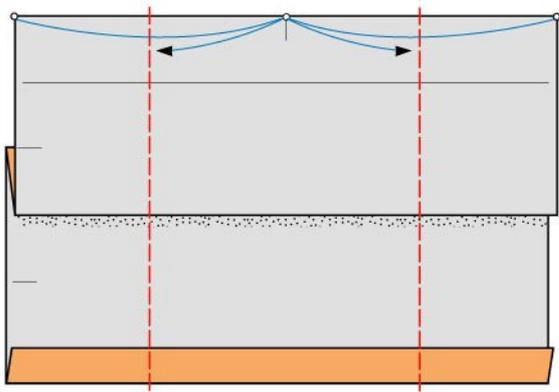
1 piega a valle orizzontale e ruotate



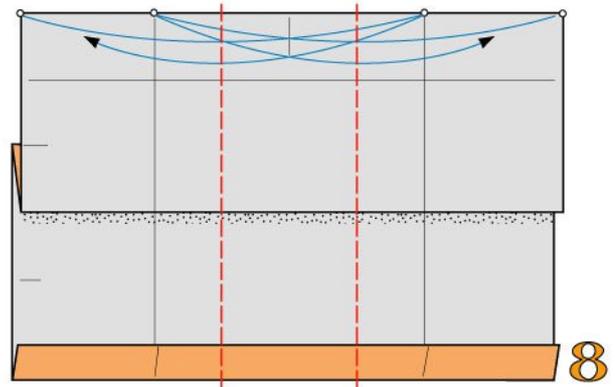
1 piega a monte orizzontale e ruotate



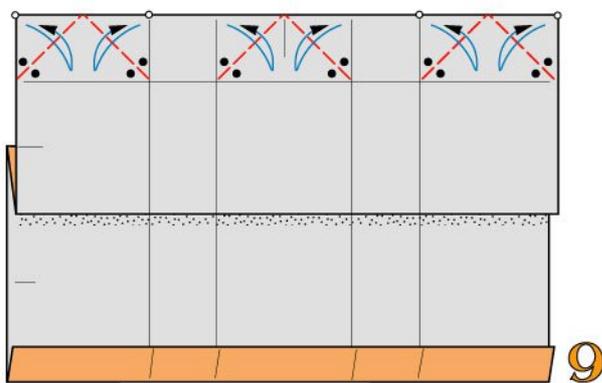
5 Ruotate ripiegando a valle



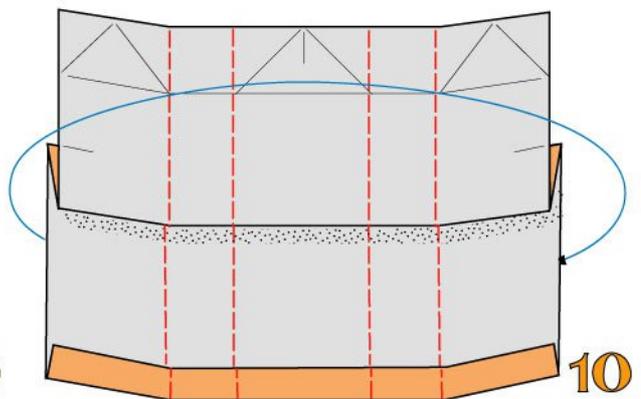
7 2 pieghe a valle



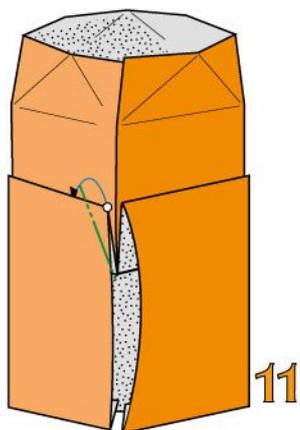
8 2 pieghe a valle



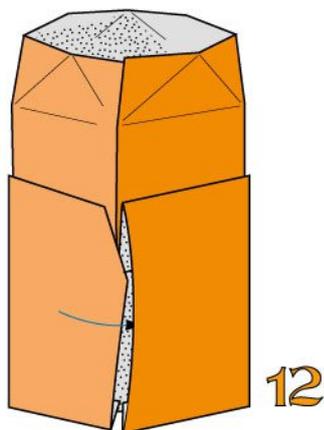
9 6 pieghe bisettrici a valle



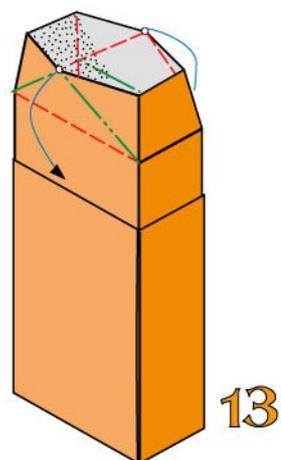
10 Chiudete 3D ripiegando a valle



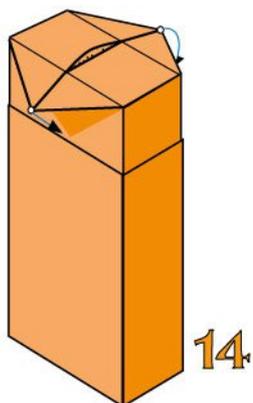
11
1 piega a monte e ruotate



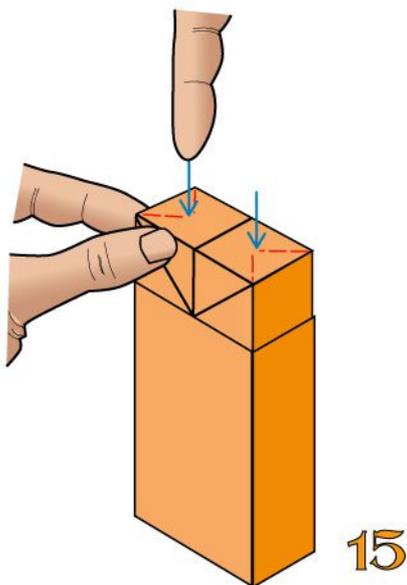
12
Intascate richiudendo completamente fino ad ottenere una sezione rettangolare



13
Ripiegando a valle ed a monte abbassate 2 vertici

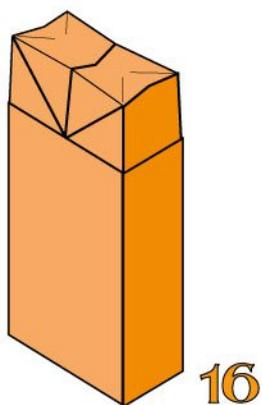


14



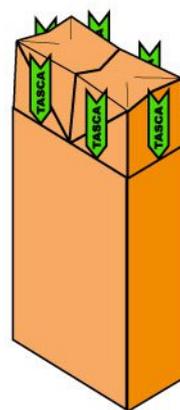
15

Comprimeo fate rientrare leggermente i quadrati superiori



16

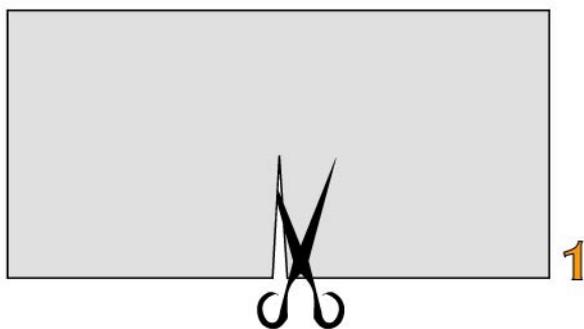
Pilastro rettangolare ultimato



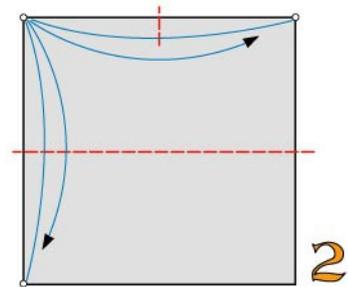
Sono utilizzabili 6 tasche per inserire travi e pareti

RECTANGULAR PILASTER TOP

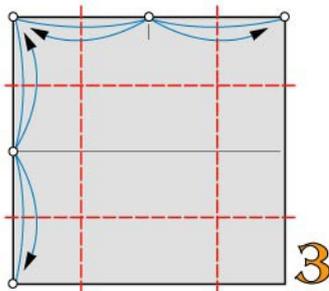
It is the element at the top of the pilaster.



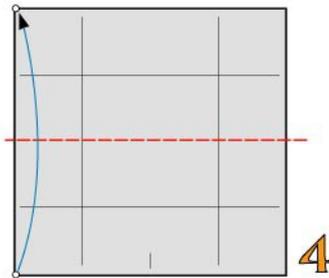
Piegate o dividete a metà un foglio rettangolare



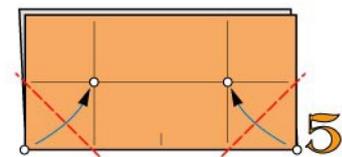
2 pieghe a valle



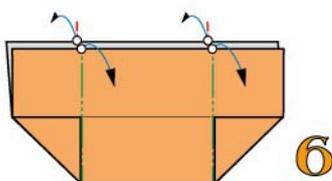
4 pieghe a valle



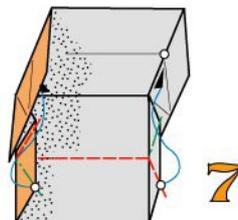
Ruotate ripiegando a valle



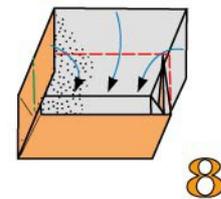
2 pieghe a valle e ruotate



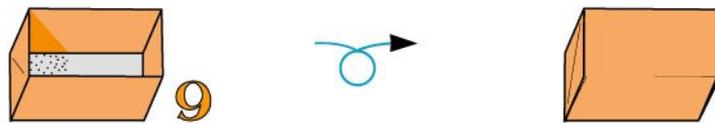
Ripiegando aprite 3D



2 pieghe a monte e richiudete 3D

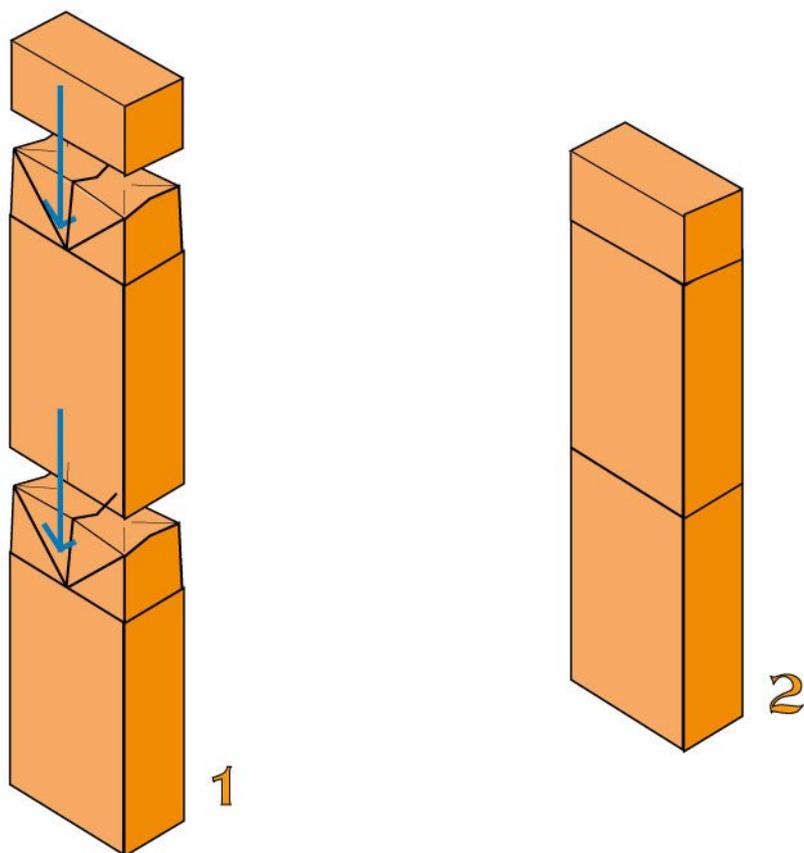


Rovesciate il bordo superiore



Cappuccio rettangolare ultimato

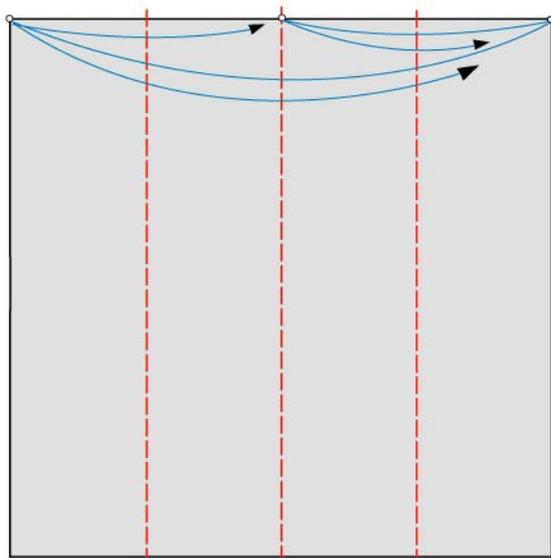
UNIONE DI 2 PILASTRI E CAPPuccio



2 pilastri si incastrano fra di loro dopo aver ancorato tutte le travi del piano

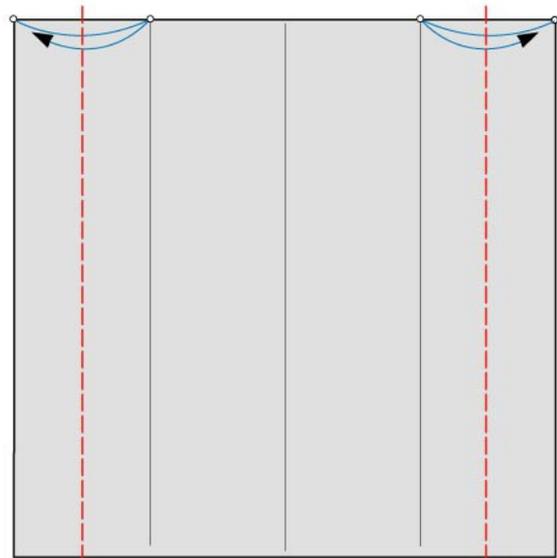
SQUARE BASE PILASTER

As for the previous one, heavy paper or cardboard has to be used.



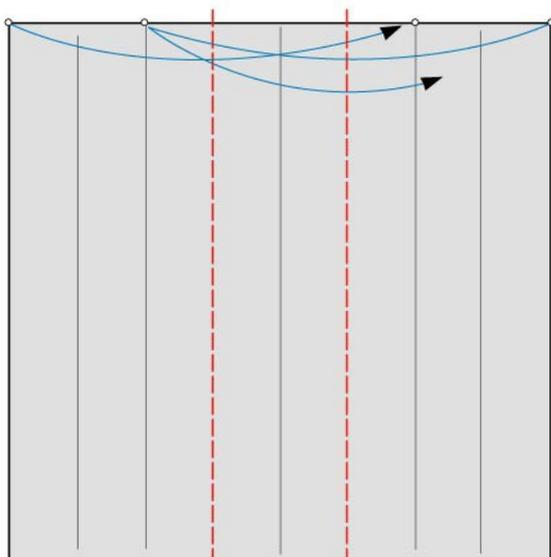
3 pieghe a valle

1



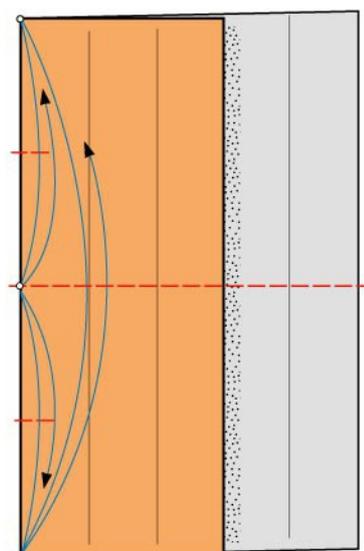
2 pieghe a valle

2



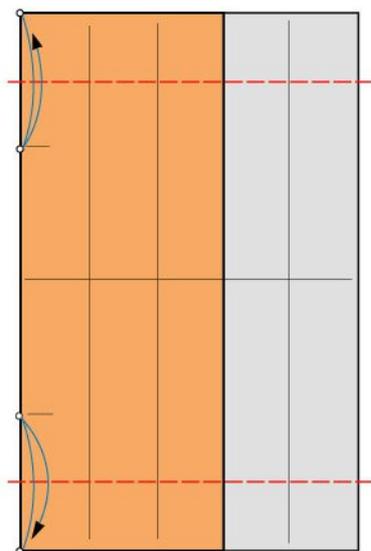
2 pieghe a valle e ruotate il bordo sinistro

3



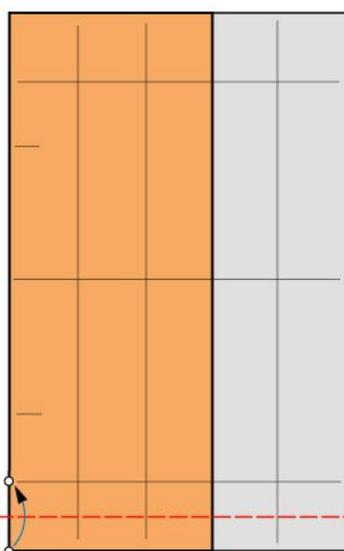
3 pieghe a valle

4



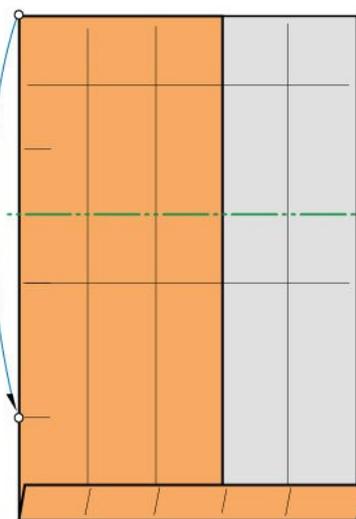
2 pieghe a valle

5



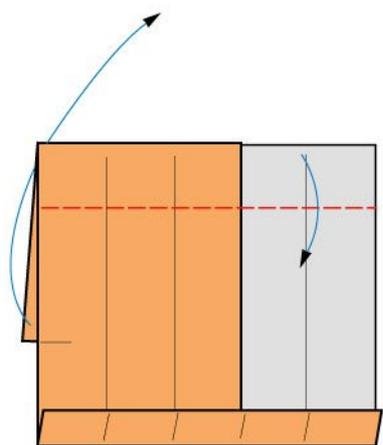
1 piega a valle e ruotate

6



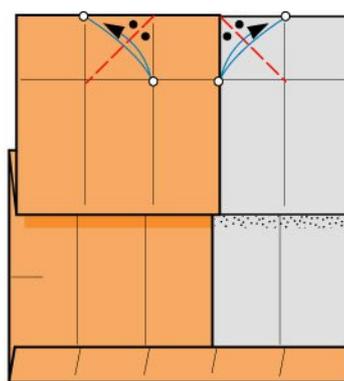
1 piega a monte e ruotate

7



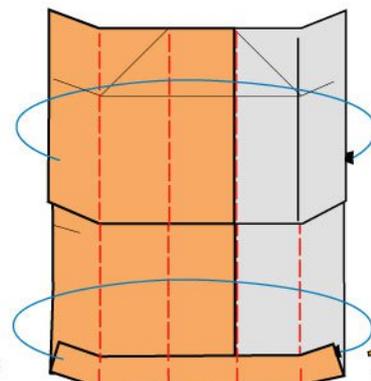
Ruotate ripiegando a valle

8



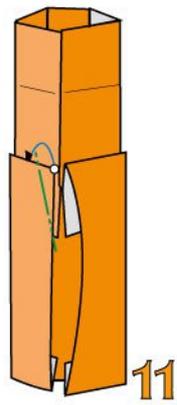
2 pieghe a valle

9

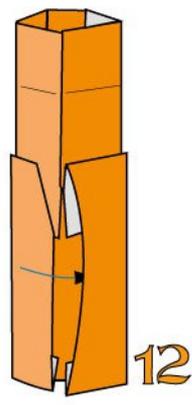


Chiudete 3D ripiegando a valle

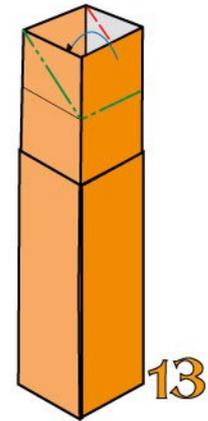
10



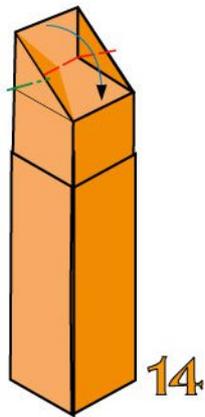
1 piega a monte e ruotate



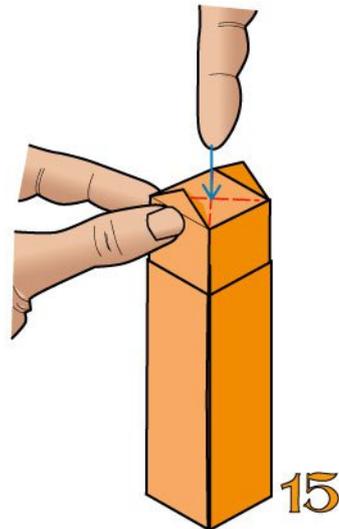
intascate



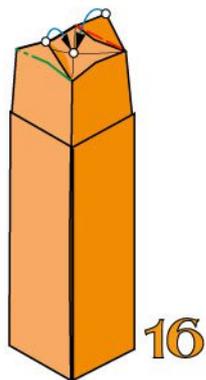
3 pieghe a monte e ruotate
abbassando il bordo indicato



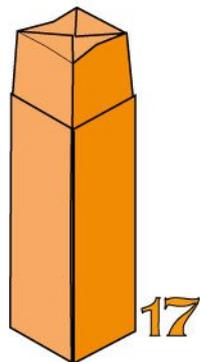
Abbassate anche il bordo opposto



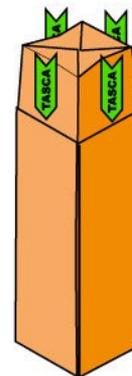
Comprimendo fate rientrare leggermente il centro



Abbassate i 2 vertici
indicati



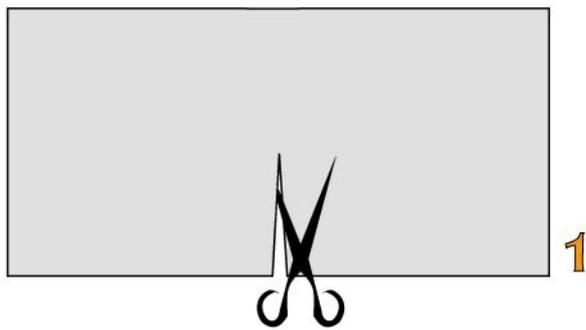
Pilastro quadrato
ultimato



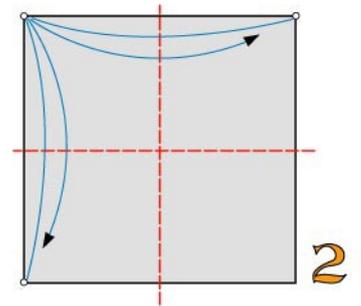
Sono utilizzabili
4 tasche

SQUARE PILASTER TOP

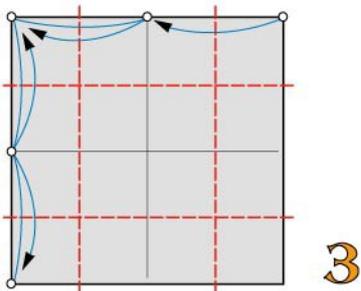
Top component of the pilaster.



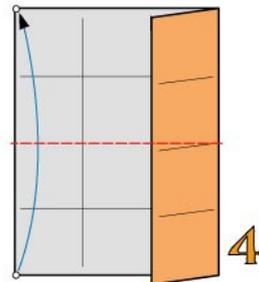
Piegate o dividete a metà un foglio rettangolare



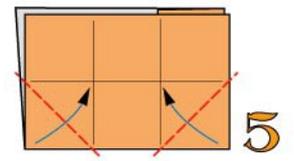
2 pieghe a valle



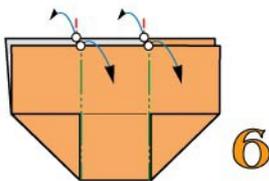
4 pieghe a valle



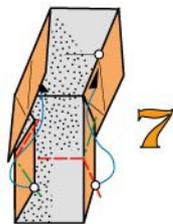
Ruotate ripiegando a valle



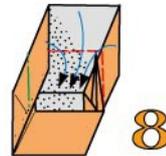
2 pieghe a valle e ruotate



Ripiegando aprite 3D



2 pieghe a monte e richiudete 3D



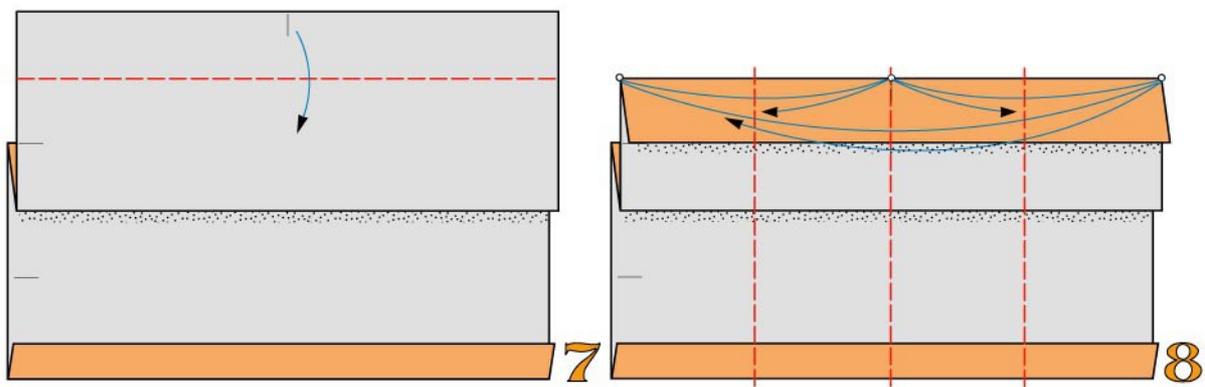
Rovesciate il bordo superiore



Cappuccio quadrato ultimato

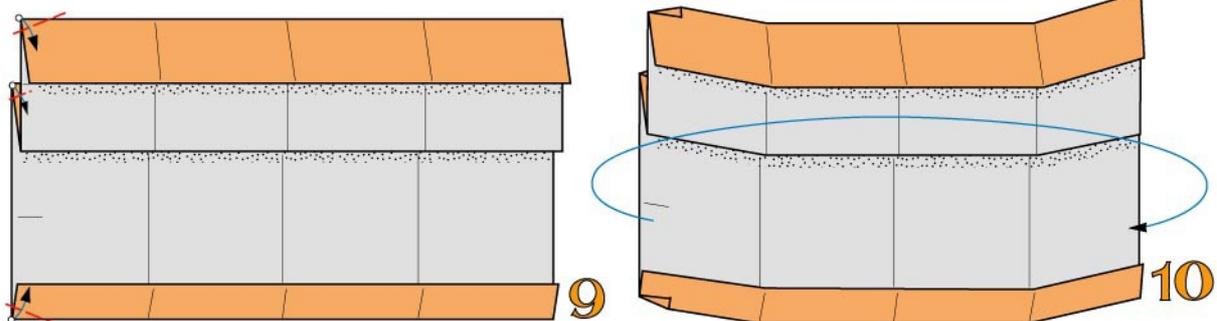
TRIANGULAR BASE PILASTER

Use heavy paper or cardboard.



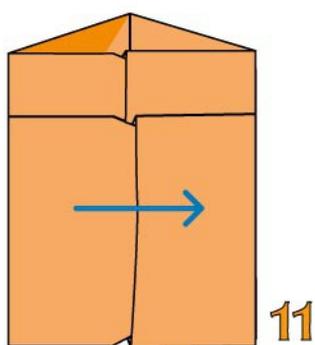
Partite dalla fig. n. 6 del pilastro rettangolare

3 pieghe a valle

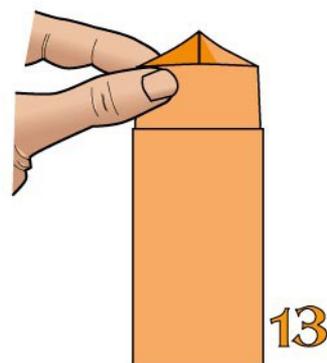
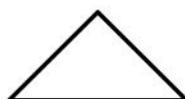
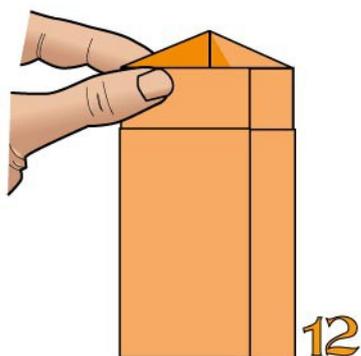


3 piccole pieghe a valle e ruotate

Chiudete 3D ripiegando a valle



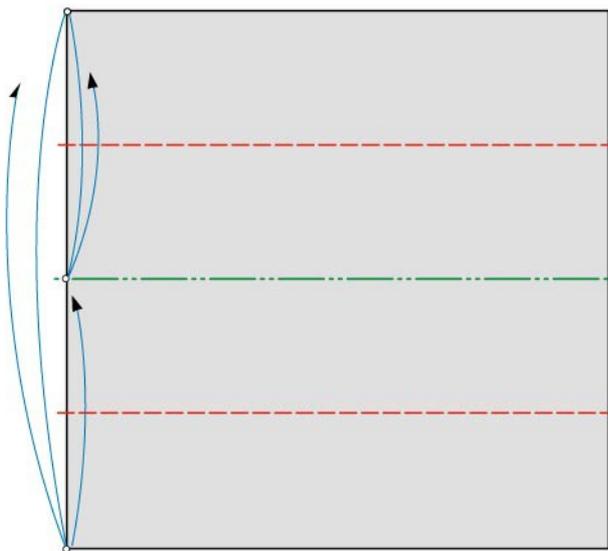
Intascate parzialmente per ottenere un pilastro a base triangolo isoscele



Intascate fino in fondo per ottenere un pilastro a base triangolo equilatero

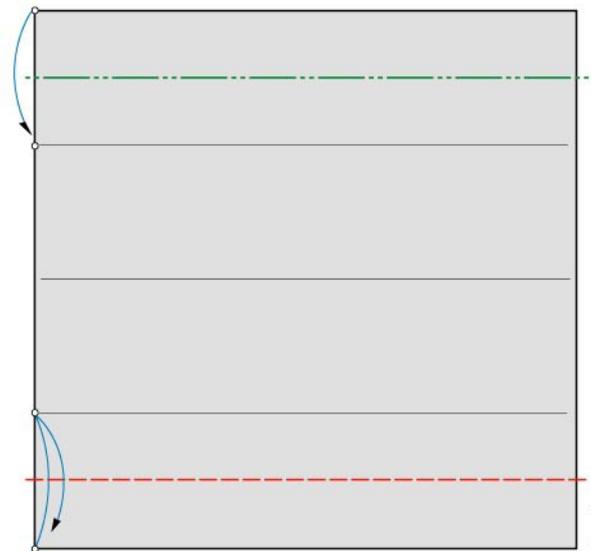
NARROW WOODEN OR CONCRETE

This is the horizontal structure that connects the pilasters, so it is necessary to use strong paper.



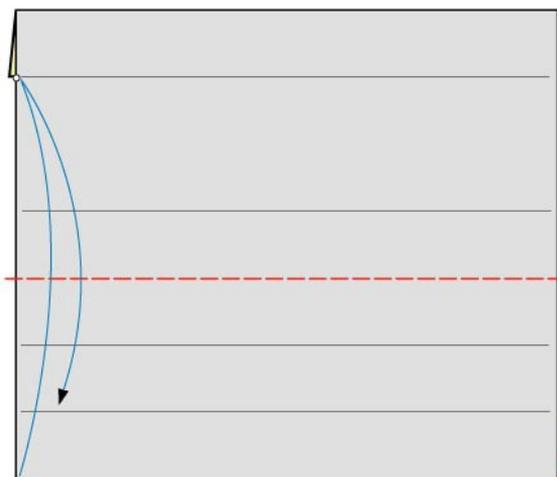
1 piega a monte centrale e 2 a valle

1



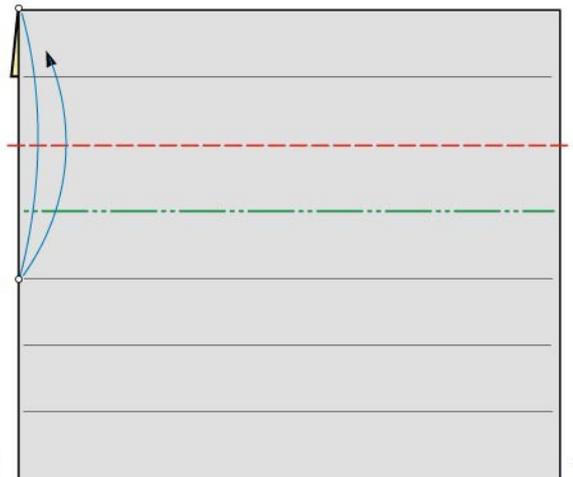
1 piega a valle e ruotate una piega a monte

2



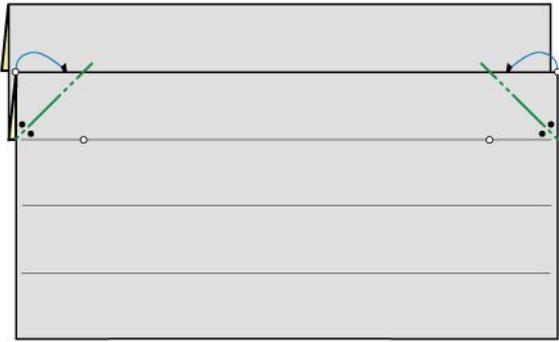
1 piega a valle

3



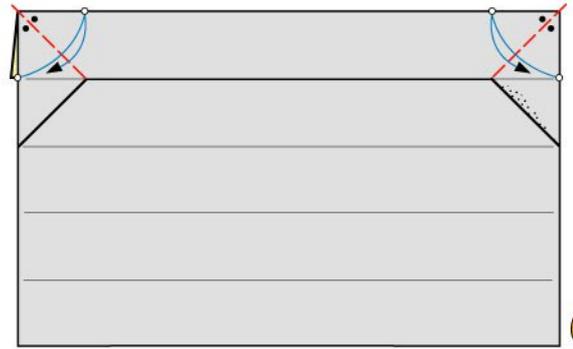
1 piega a valle e ruotate ripiegando a monte

4



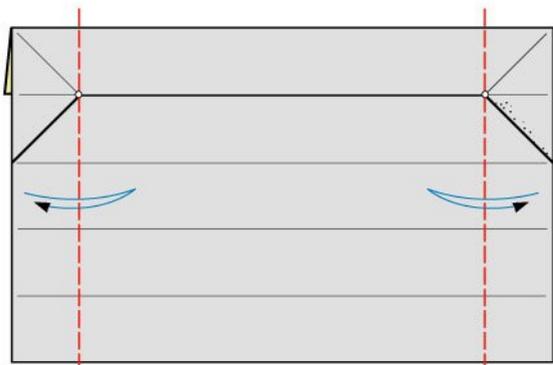
5

2 pieghe bisettrici a monte e ruotate



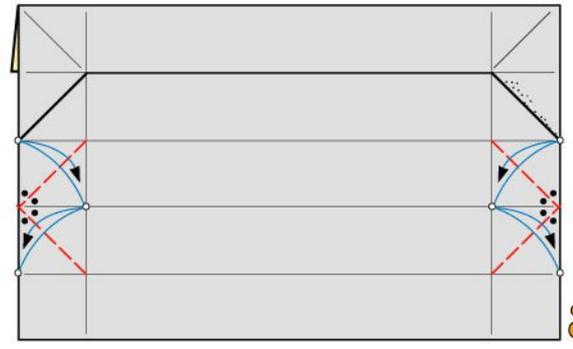
6

2 pieghe bisettrici a valle



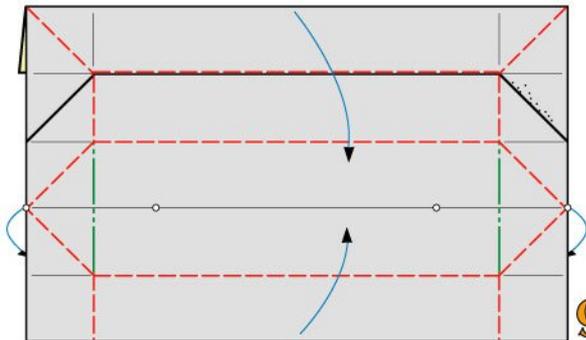
7

2 pieghe a valle

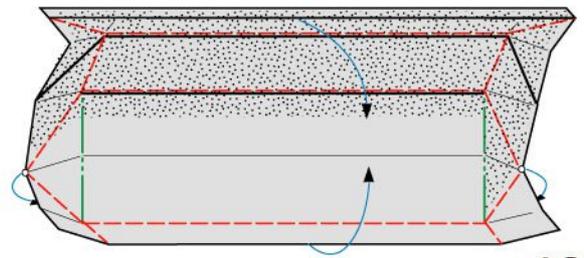


8

4 pieghe bisettrici a valle

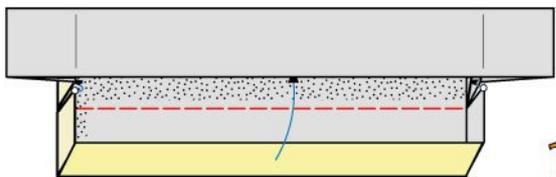


9



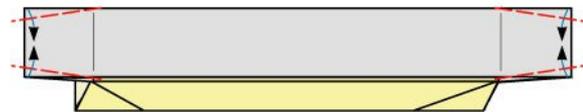
10

Ripiegando a valle ed a monte modellate 3D



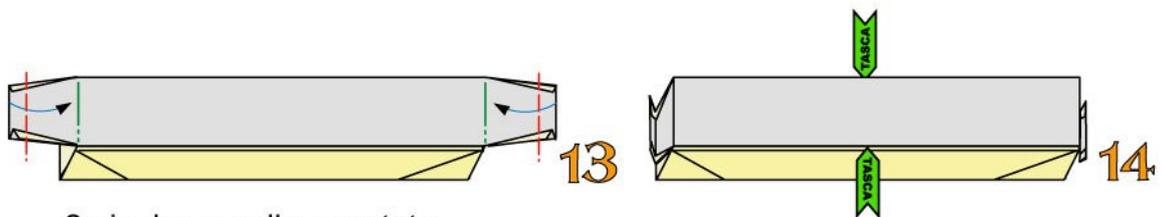
11

Ripiegando a valle ed a monte richiudete



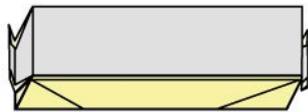
12

4 pieghe bisettrici a valle e ruotate



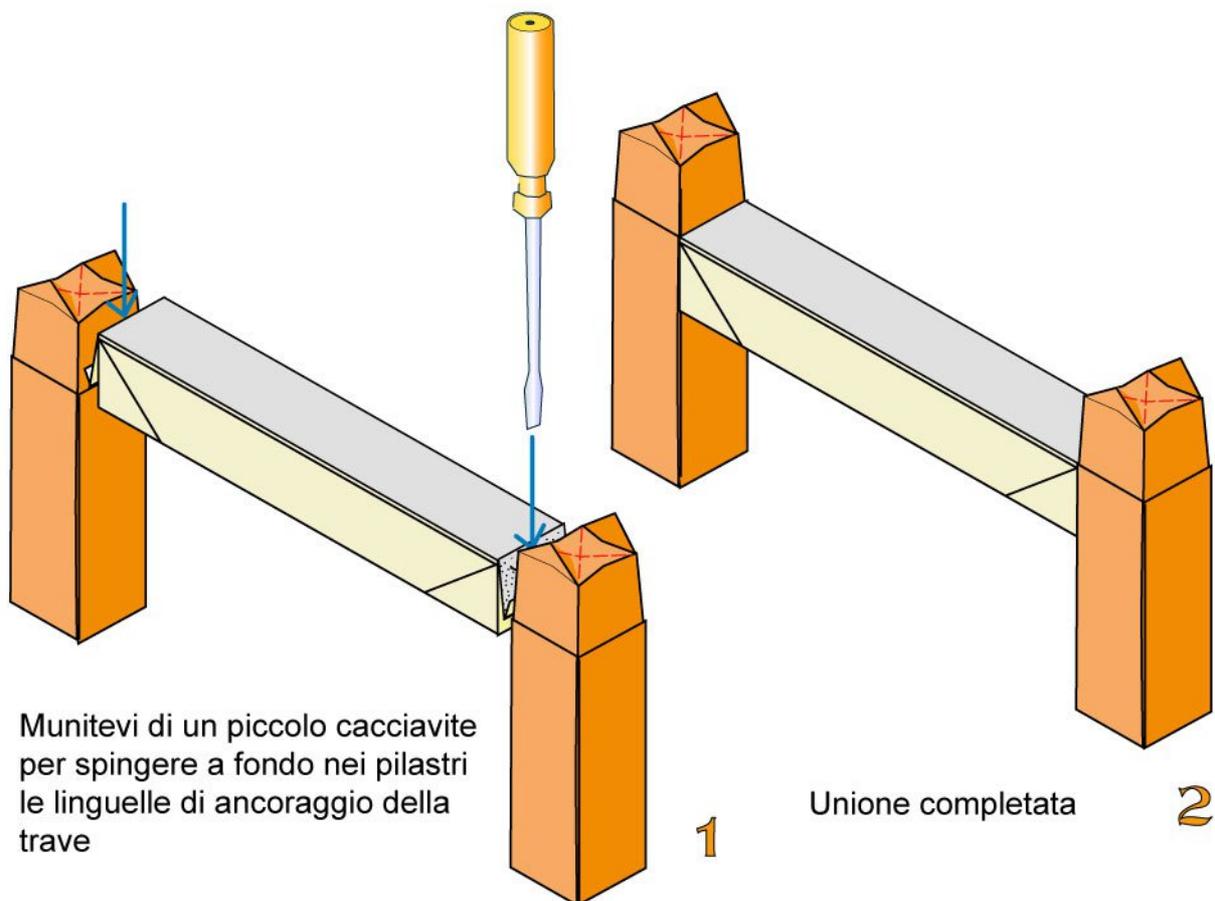
2 pieghe a valle e ruotate ripiegando a monte

Nella trave sono presenti 2 tasche per l'inserimento di solai e pareti



Può essere utile la realizzazione di travi di lunghezza ridotta

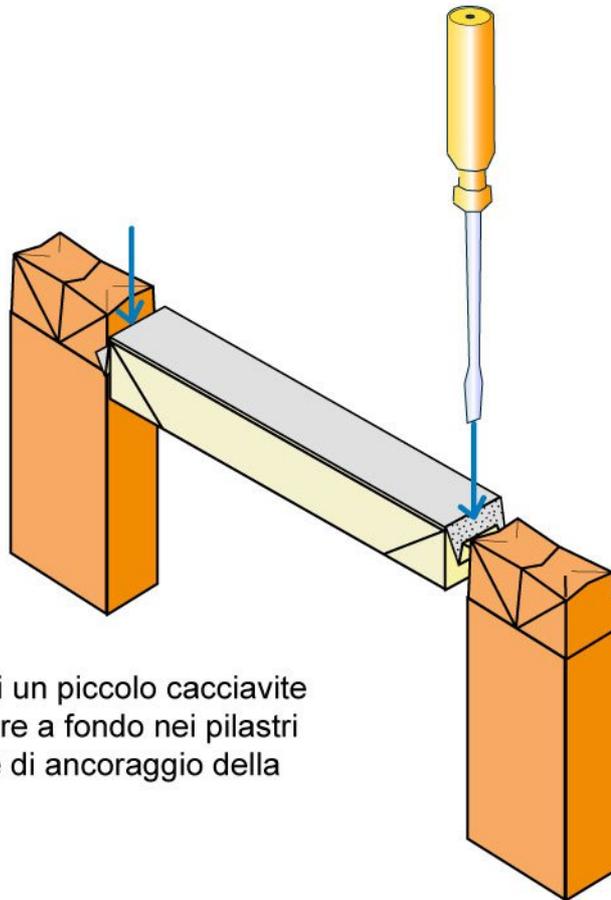
MONTAGGIO DI UNA TRAVE SU 2 PILASTRI A SEZIONE QUADRATA



Munitevi di un piccolo cacciavite per spingere a fondo nei pilastri le linguette di ancoraggio della trave

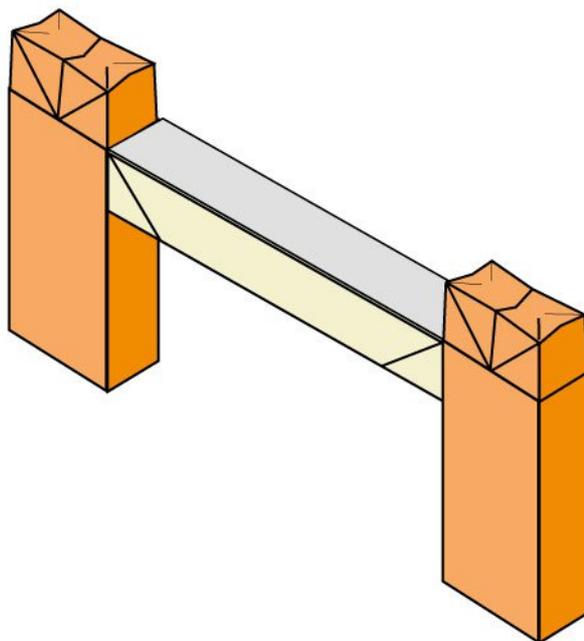
Unione completata

MONTAGGIO DI UNA TRAVE SU 2 PILASTRI A SEZIONE RETTANGOLARE



Munitevi di un piccolo cacciavite per spingere a fondo nei pilastri le linguelle di ancoraggio della trave

1

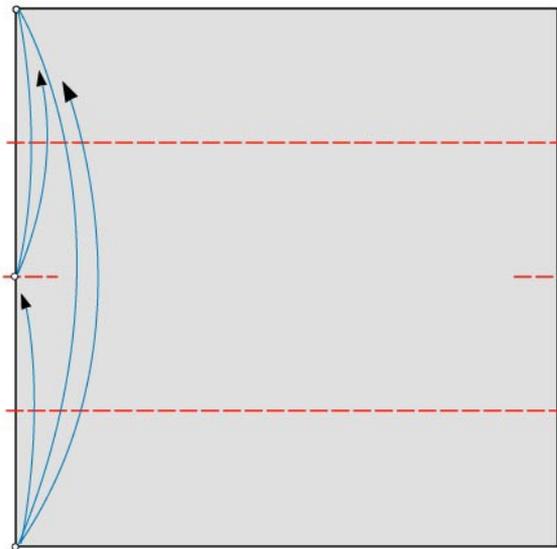


2

Unione completata

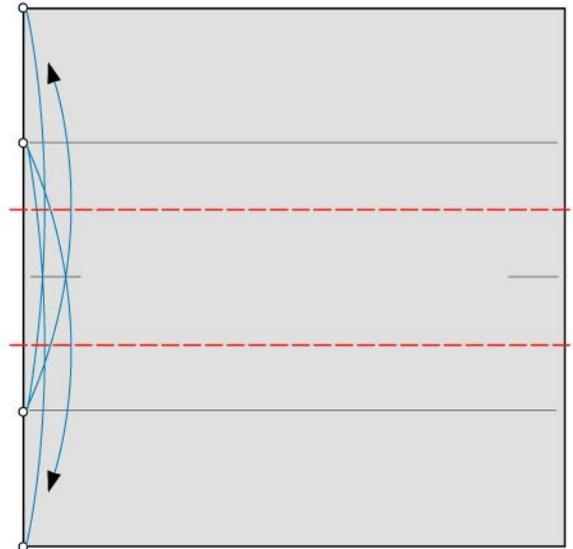
LARGE WOOD OR CONCRETE BEAM

Use heavy paper or light cardboard.



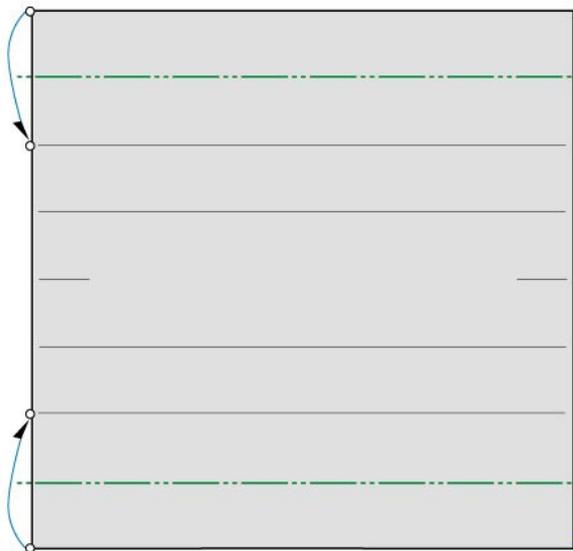
3 pieghe a valle

1



2 pieghe a valle

2



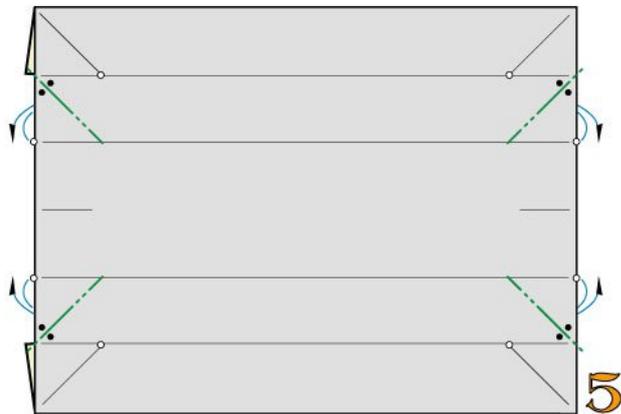
2 pieghe a monte e ruotate

3

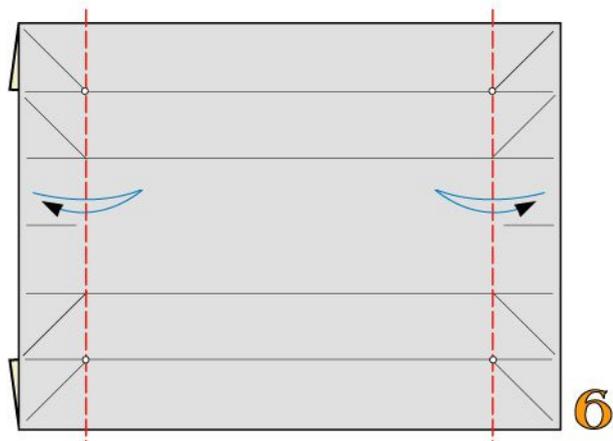


4 pieghe bisettrici a valle

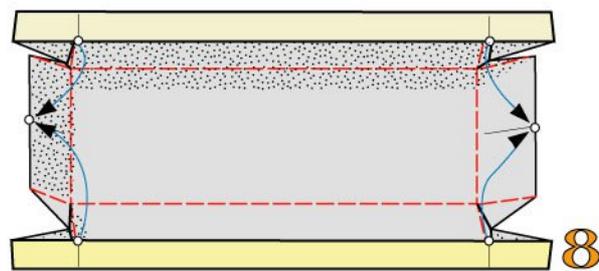
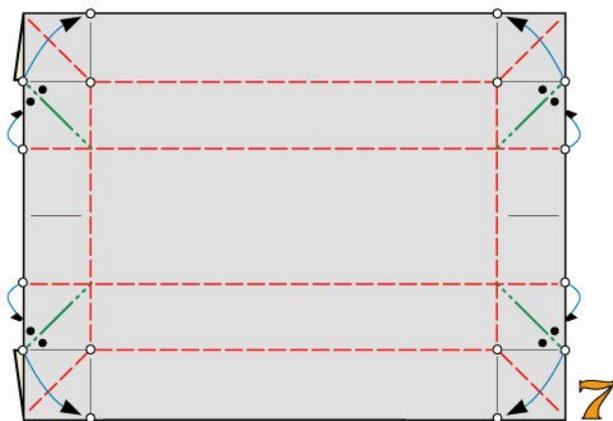
4



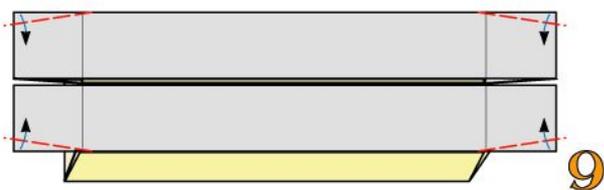
4 pieghe bisettrici a monte



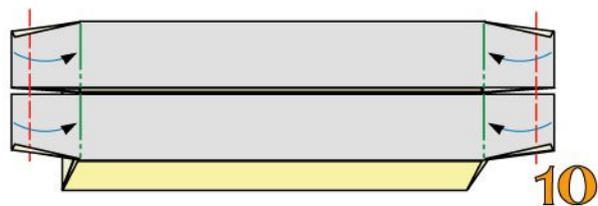
2 pieghe a valle



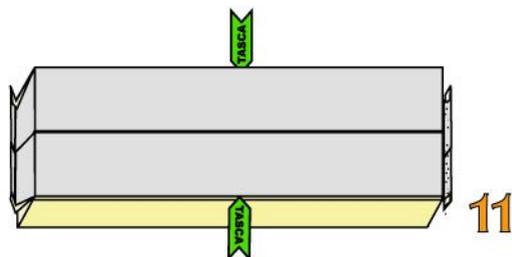
Chiudete 3D ripiegando a valle ed a monte



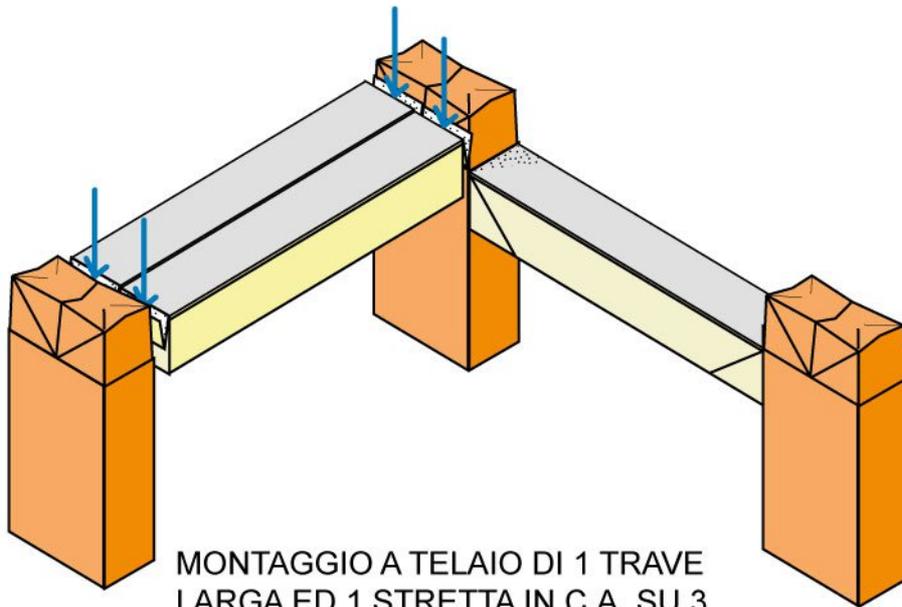
4 pieghe a valle e ruotate



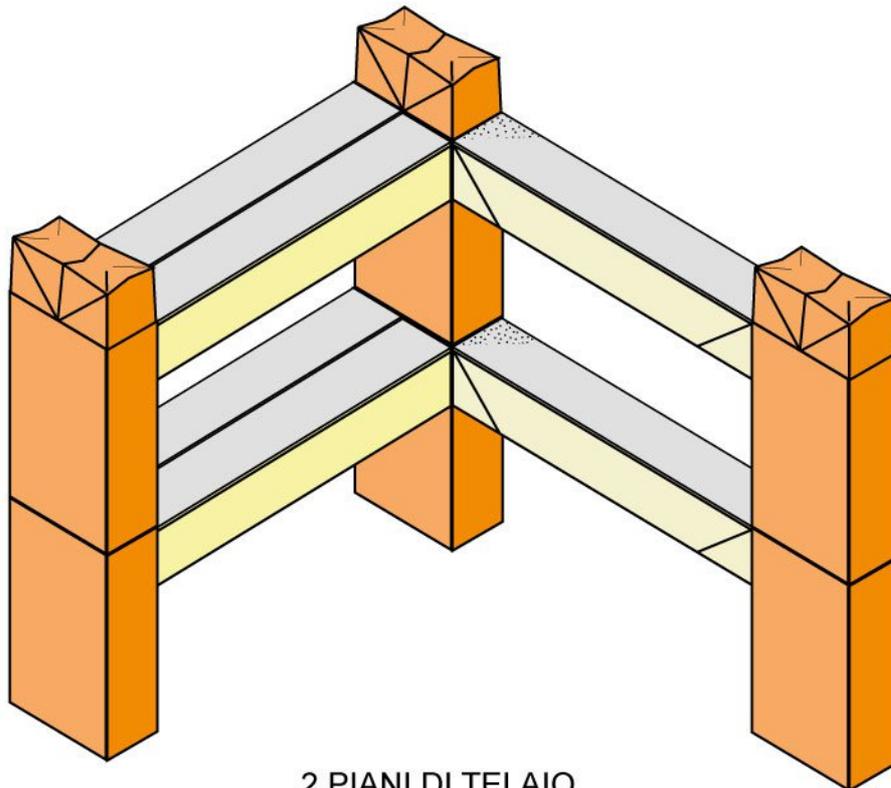
4 pieghe a valle e ripiegate a monte



Trave larga in legno o c.a. ultimata



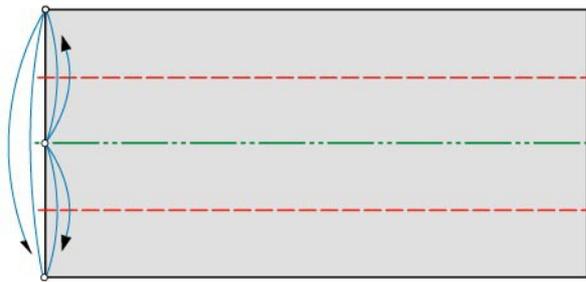
MONTAGGIO A TELAIO DI 1 TRAVE
LARGA ED 1 STRETTA IN C.A. SU 3
PILASTRI RETTANGOLARI



2 PIANI DI TELAIO

2.2 - NARROW STEEL BEAM

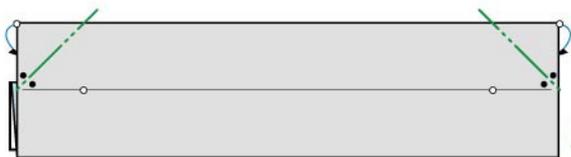
The function of this structural component having an L-shaped cross-section, is to connect the pilasters. Some heavy paper is required for the construction.



1 piega a monte e 2 a valle



Ripiegando, ruotate



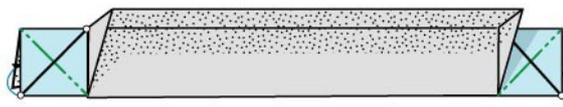
2 pieghe a monte e ruotate



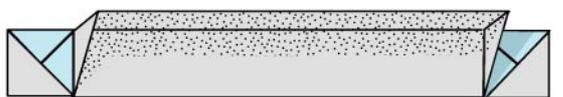
2 pieghe bisettrici a valle



2 pieghe bisettrici a valle e, ripiegando, ruotate 3D



2 pieghe bisettrici a monte e ruotate all'interno



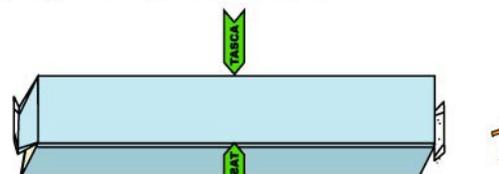
ribaltate



4 pieghe a valle e ruotate



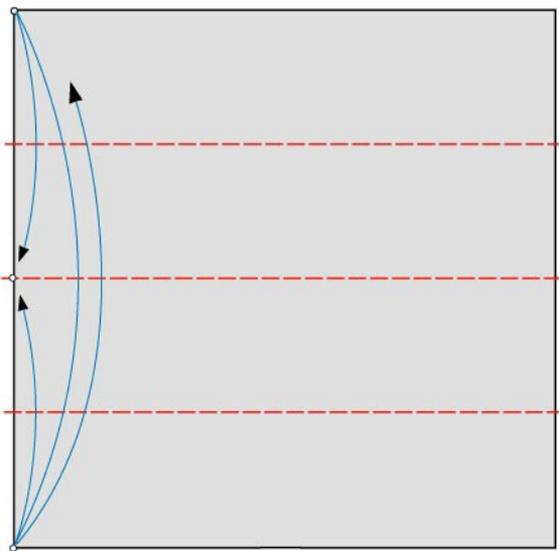
2 pieghe a valle e ruotate ripiegando a monte



Nella trave sono presenti 2 tasche per l'inserimento di solai e pareti

23 - LARGE STEEL BEAM

Structural component with T-shaped cross section, connecting the pilasters. Use heavy paper.



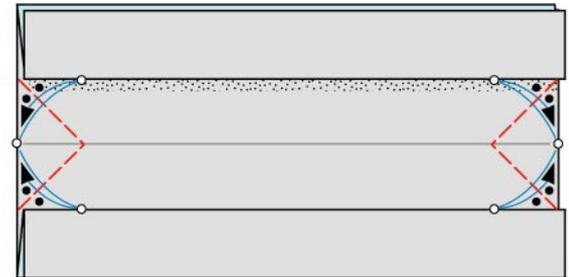
3 pieghe a valle

1



2 pieghe a valle e ruotate

2



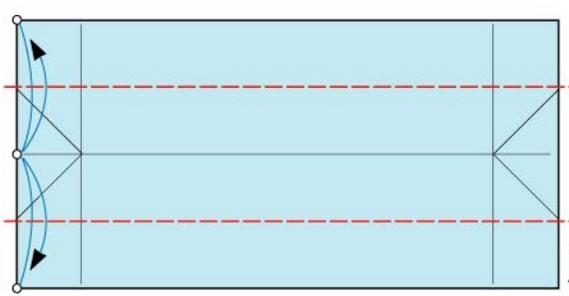
4 pieghe bisettrici a valle

3



2 pieghe bisettrici a valle e ribaltate

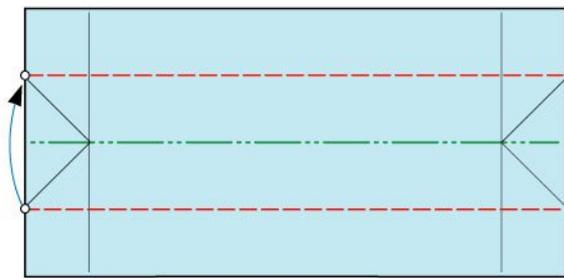
4



2 pieghe a valle

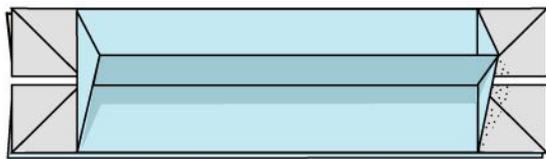
5





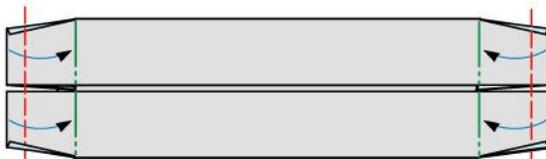
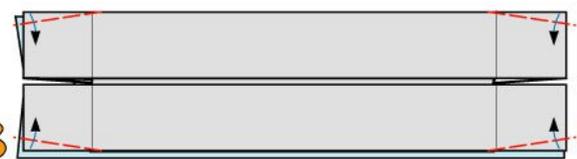
Ripiegando ruotate 3D

6 4 pieghe a valle e, ripiegando a monte, ruotate 3D 7



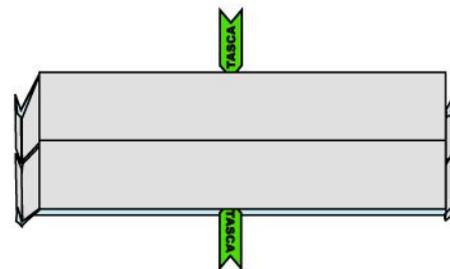
Ribaltate

8 4 pieghe a valle e ruotate 9

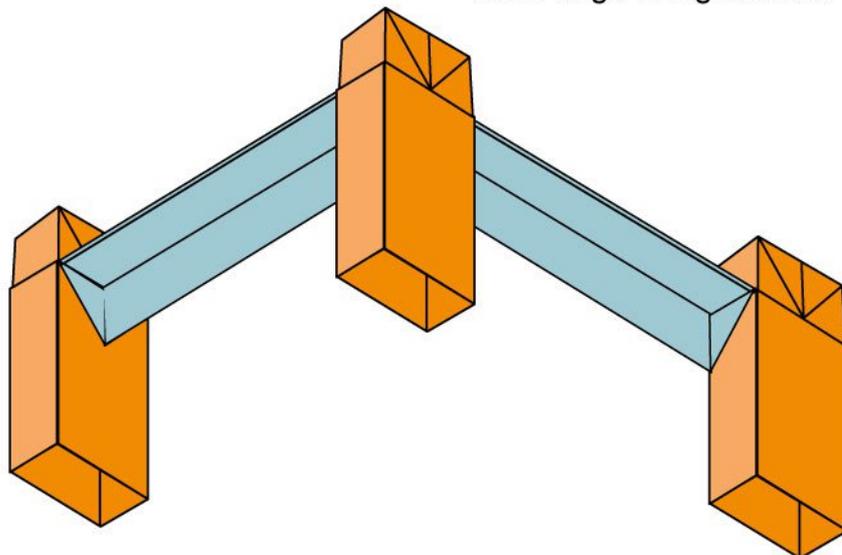


4 pieghe a valle e ruotate ripiegando a monte

10 11



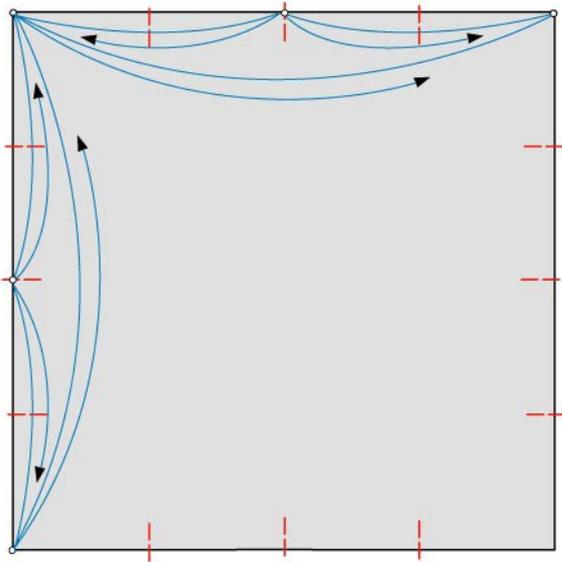
Trave larga in legno o c.a. ultimata



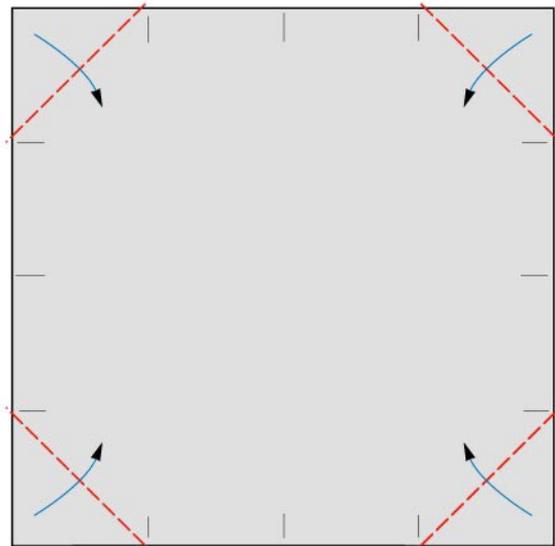
UNIONE DI 3 PILASTRI RETTANGOLARI CON UNA TRAVE LARGA ED UNA STRETTA IN ACCIAIO

FLOOR PLATE

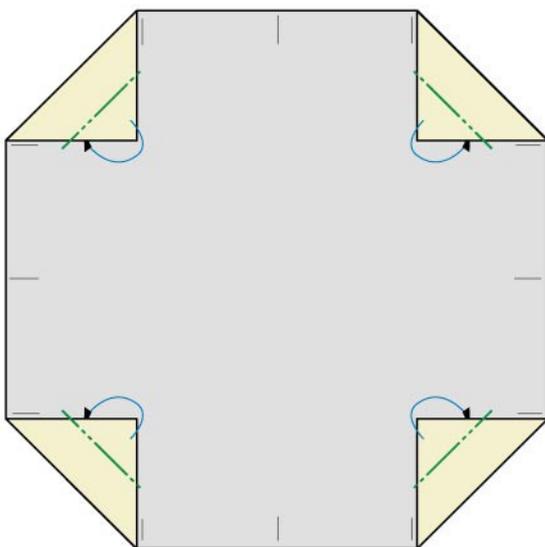
A simple plate to be inserted into the pockets of the beams.



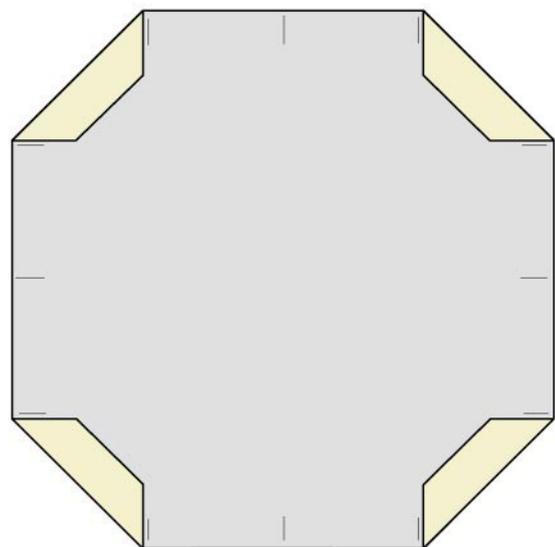
Dividete i lati in quarti



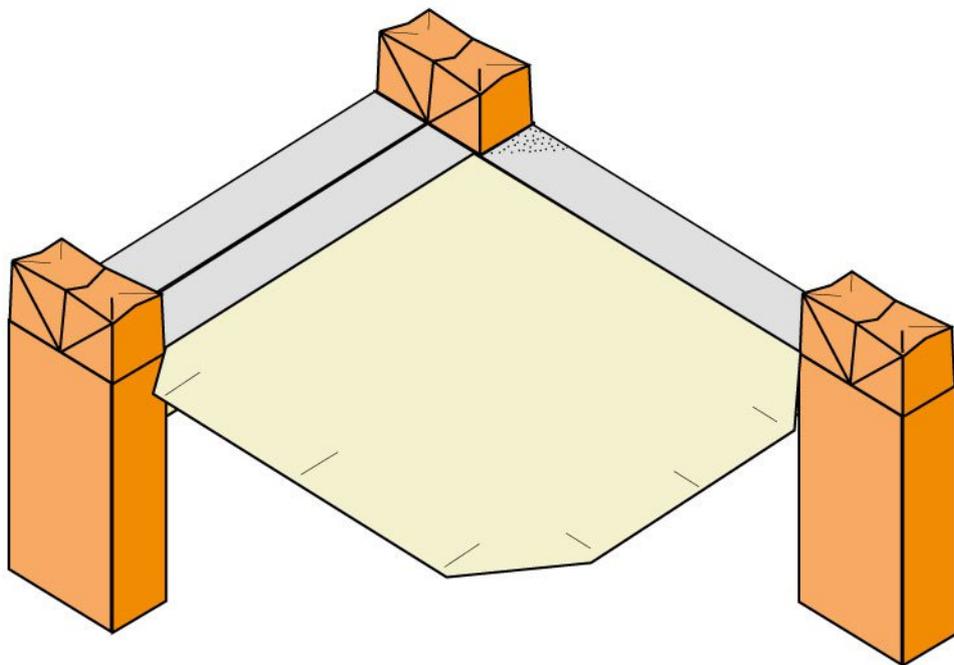
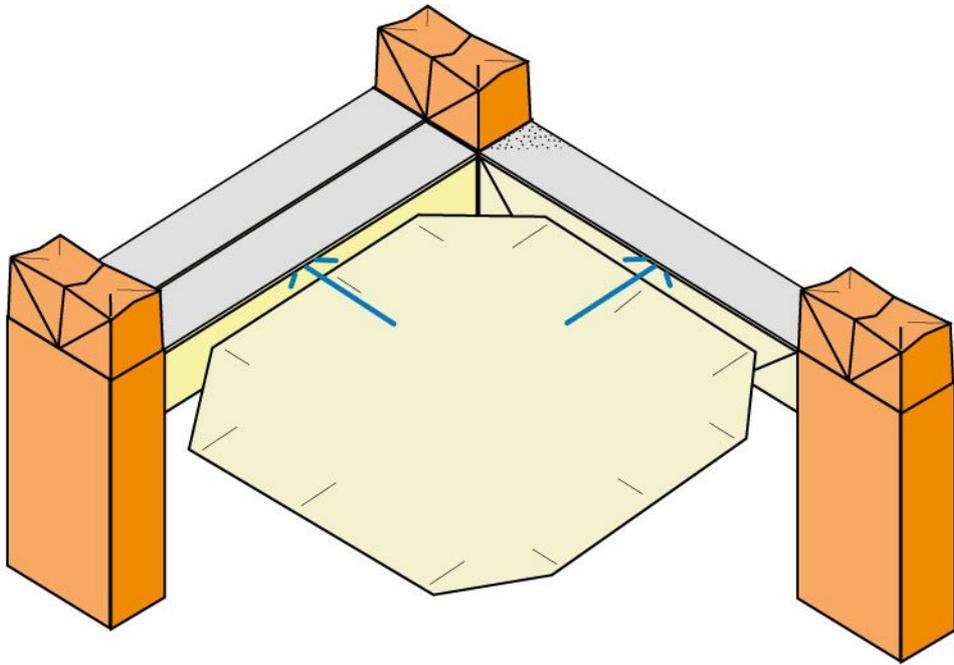
4 pieghe a valle e ruotate



4 pieghe a monte e ruotate



Piastra solaio ultimata

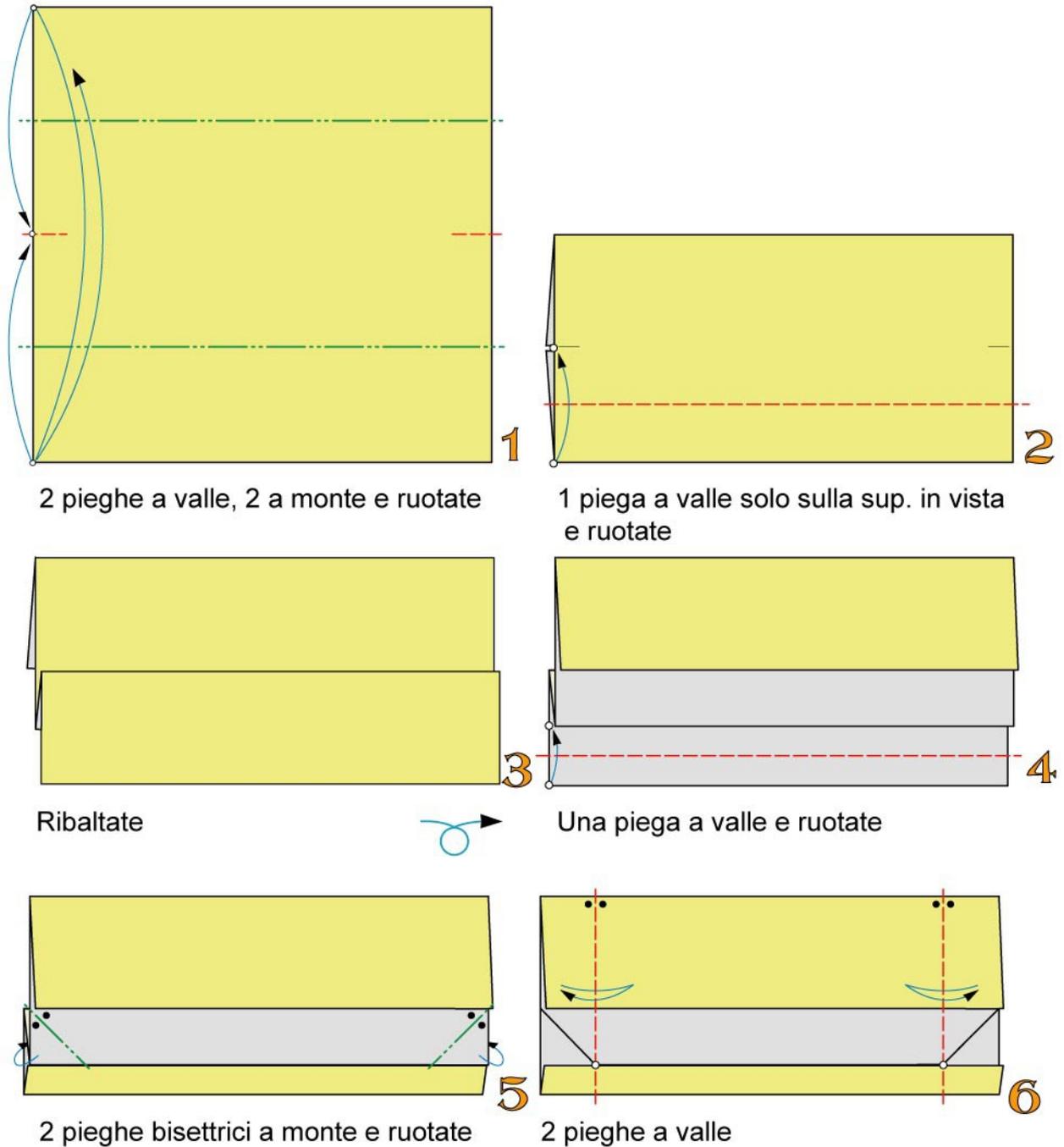


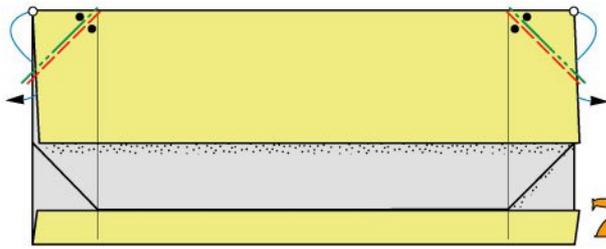
MONTAGGIO DI UN SOLAIO NELLE TRAVI

BALCONY

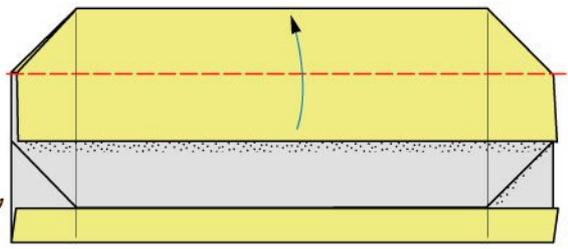
Important architectural element invented by the Romans for the "insulae" which are the ancestors of contemporary "blocks of flats".

In modern buildings balconies can be very wide; the parapet can be made of all kind of materials, in this case with bricks or reinforced concrete.

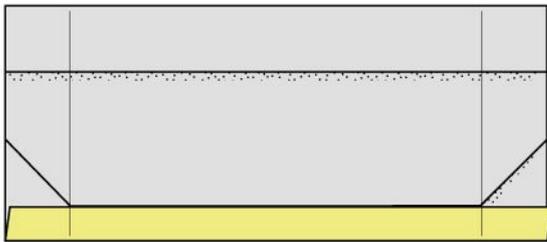




2 pieghe rovesce interne



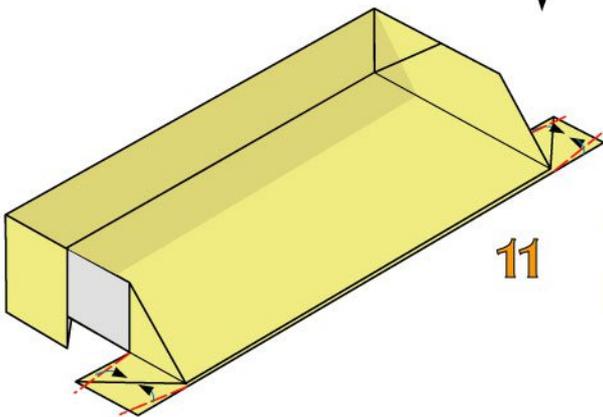
1 piega a valle solo sulla sup. in vista e ruotate



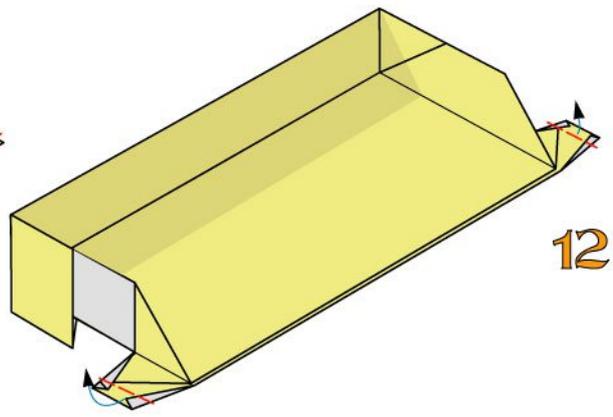
Ribaltate



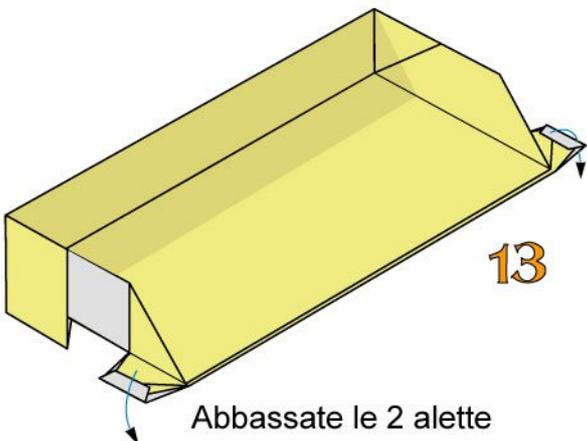
Ripiegando aprite 3D



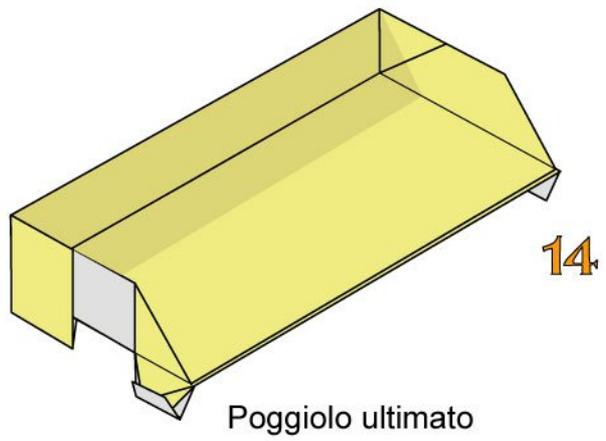
4 pieghe a valle e ruotate



2 pieghe a valle e ruotate

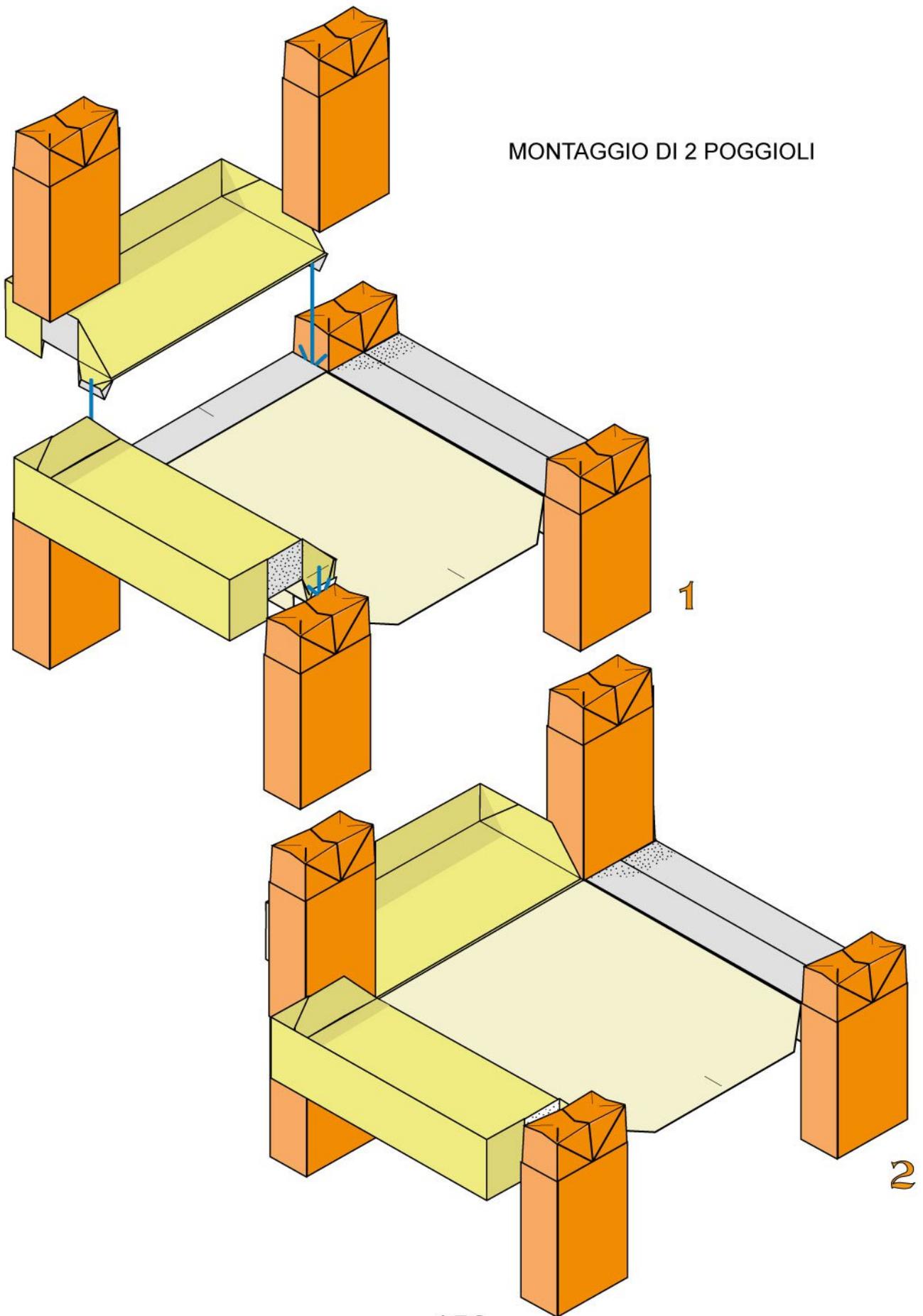


Abbassate le 2 alette



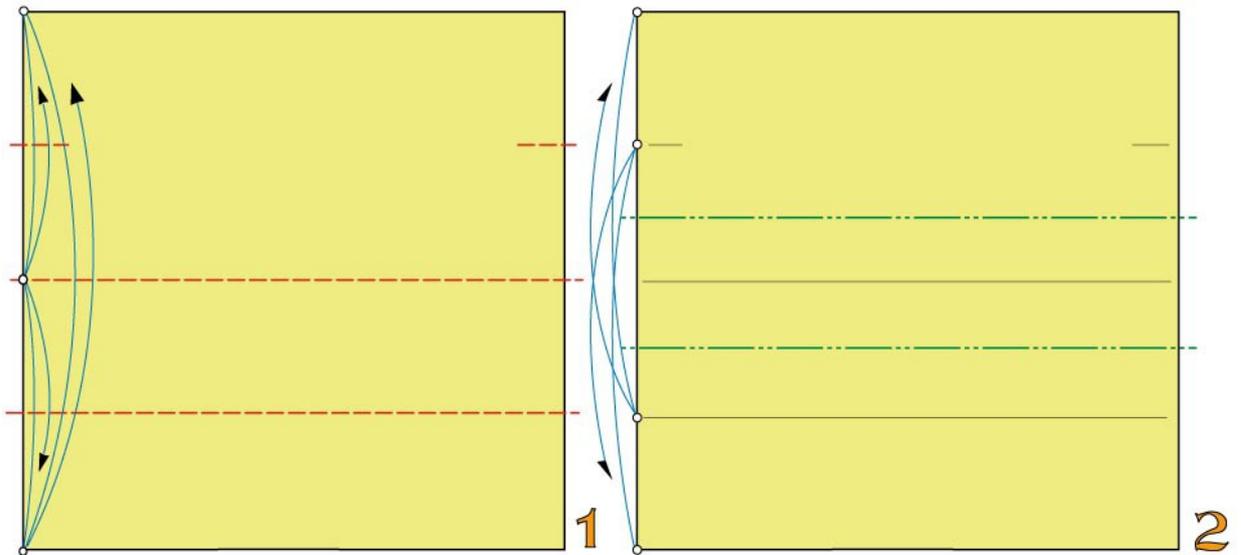
Poggiolo ultimato

MONTAGGIO DI 2 POGGIOLI



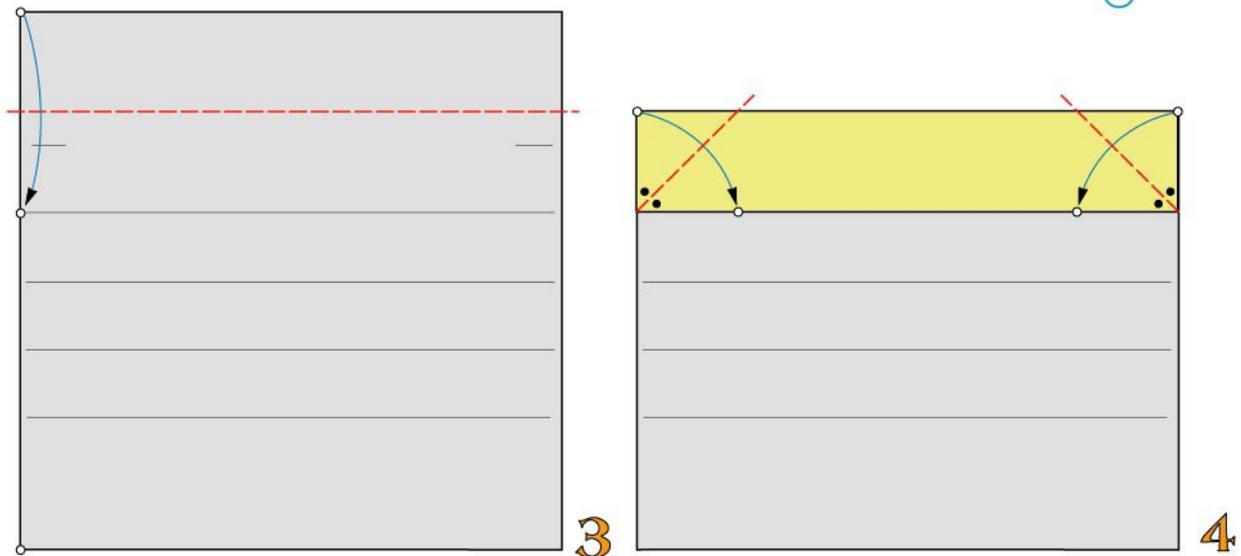
PARAPET

Construction of a closed balcony, i.e. a balcony that is not protruding out of the building. It can be assembled as a single unit or on top of a beam.



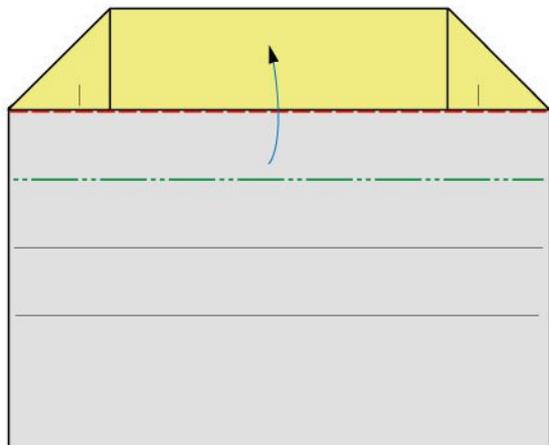
4 pieghe a valle

2 pieghe a monte e ribaltate



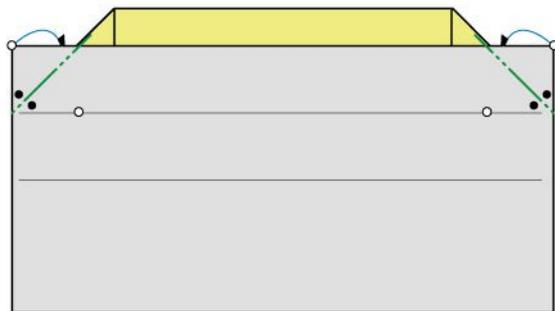
1 piega a valle e ruotate

2 pieghe bisettrici a valle e ruotate



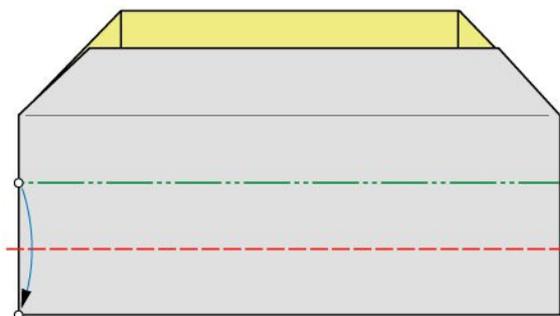
5

Ruotate ripiegando a valle ed a monte



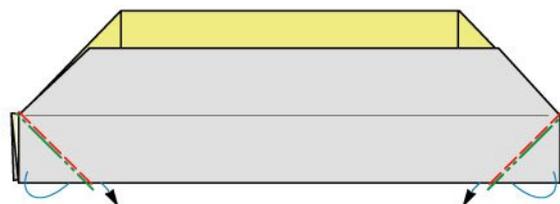
6

2 pieghe bisettrici a monte e ruotate



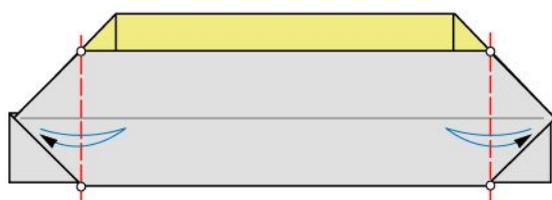
7

1 piega a valle e ruotate ripiegando a monte



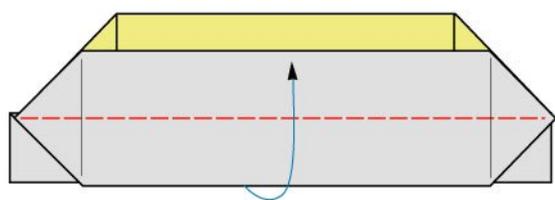
8

2 pieghe rovesce interne



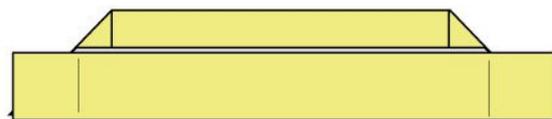
9

2 pieghe a valle



10

Ruotate ripiegando a valle



11

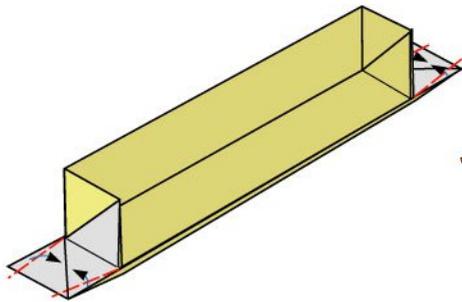
Ribaltate



12

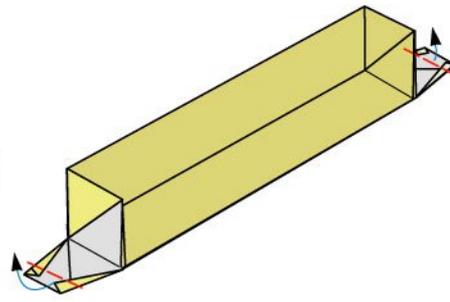
Ripiegando aprite 3D





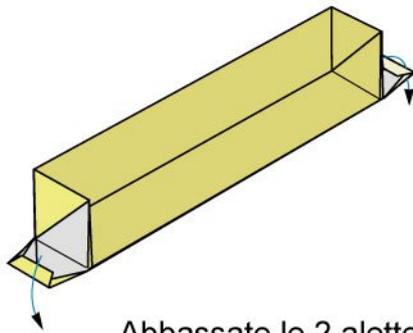
13

4 pieghe a valle e ruotate



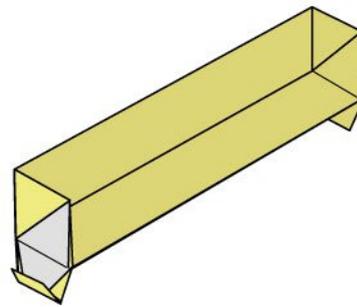
14

2 pieghe a valle e ruotate



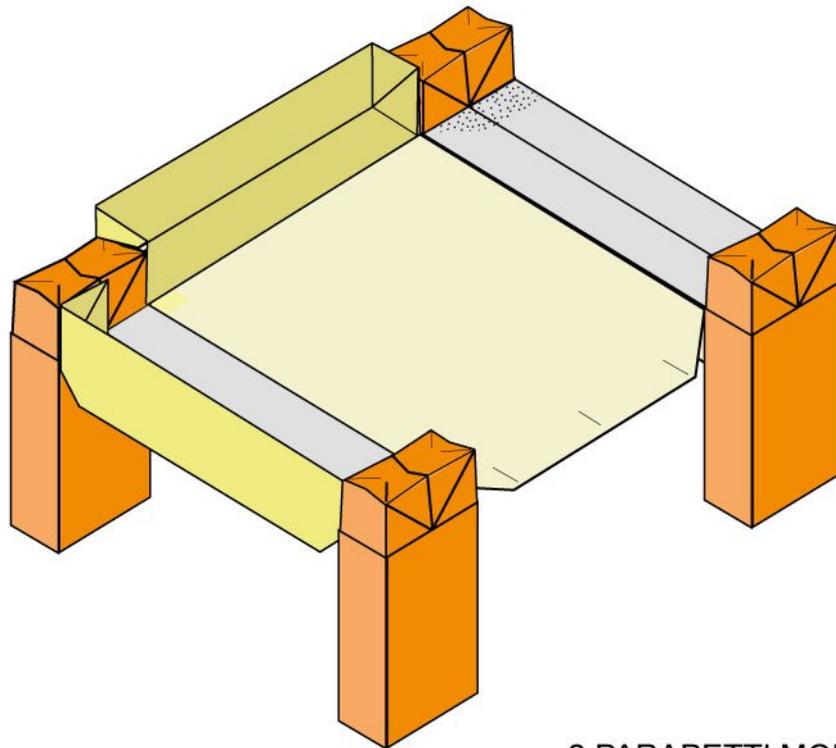
15

Abbassate le 2 alette



16

Parapezzo ultimato

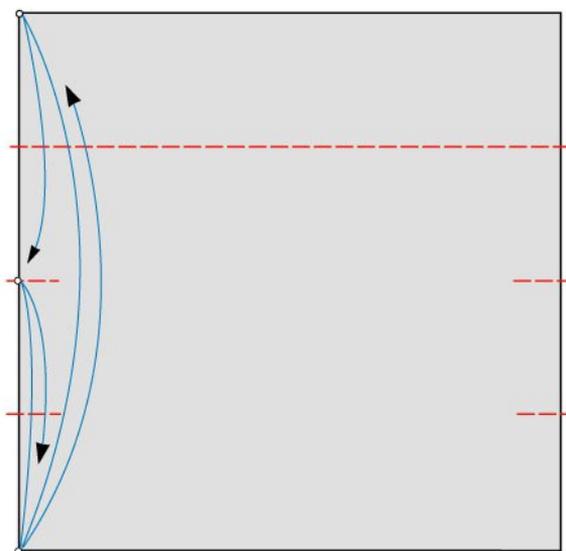


2 PARAPETTI MONTATI

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POGGIOLO con fioriera

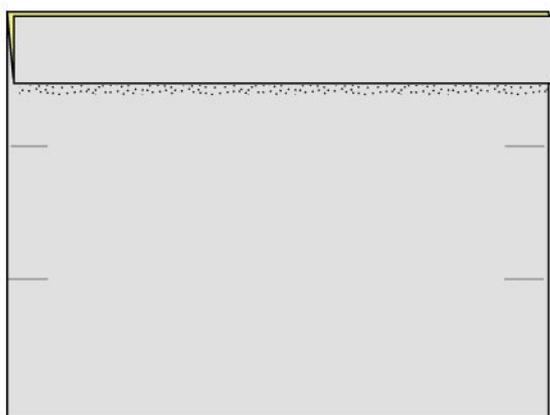
Elemento architettonico di costruzione complessa, indicato per origamisti esperti.



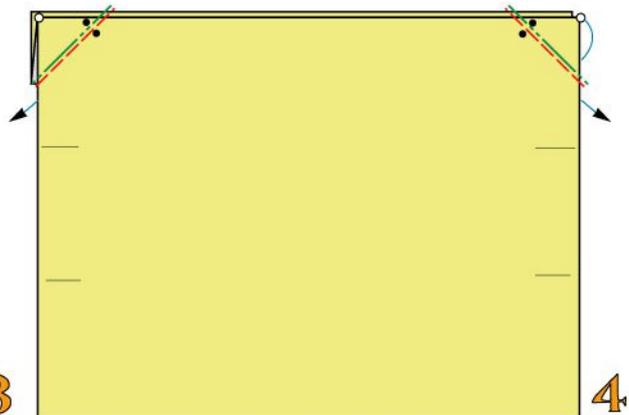
5 pieghe a valle e ruotate il bordo superiore



1 piega a valle solo sulla sup. in vista e ruotate il bordo superiore

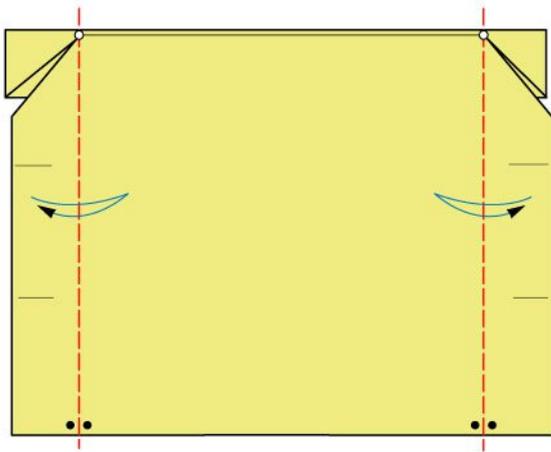


Ribaltate

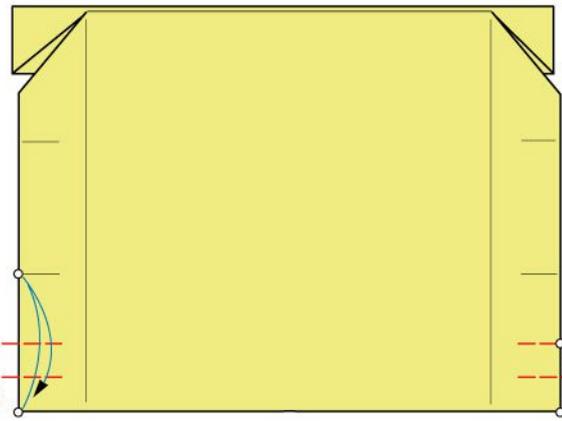


2 pieghe rovesce interne





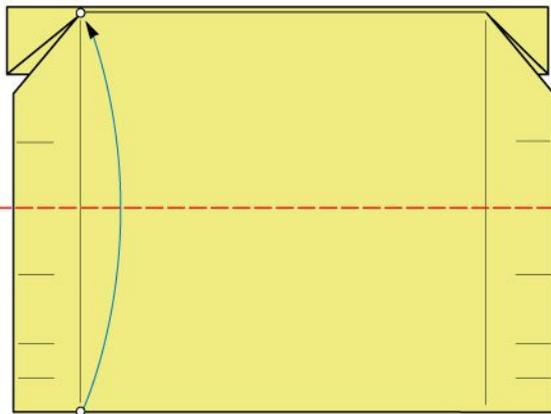
2 pieghe bisettrici a valle



5

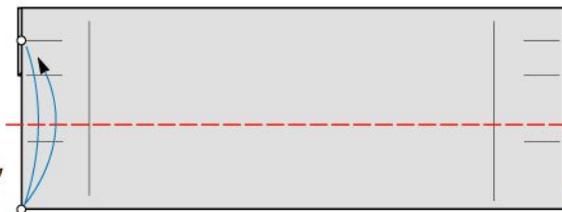
4 pieghe a valle

6



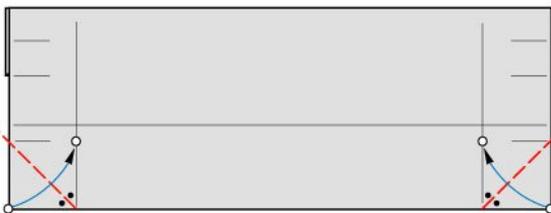
1 piega a valle e ruotate

7



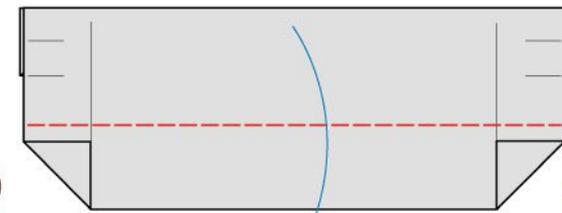
1 piega a valle solo sulla sup. in vista

8



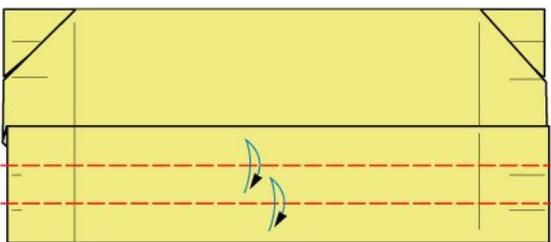
2 pieghe bisettrici a valle e ruotate

9



Ruotate ripiegando a valle

10



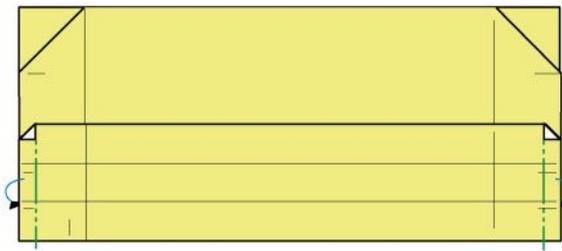
2 pieghe parallele a valle

11



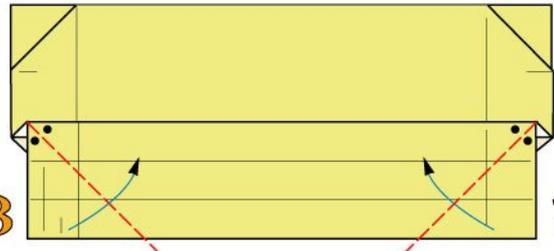
2 piccole pieghe a valle e ruotate

12



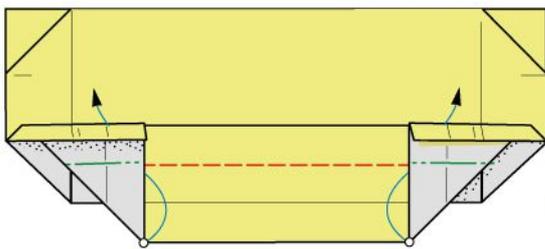
2 pieghe a monte e ruotate

13



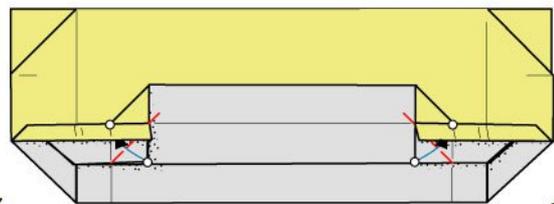
2 pieghe bisettrici a valle e ruotate

14



2 pieghe rovesce interne

15



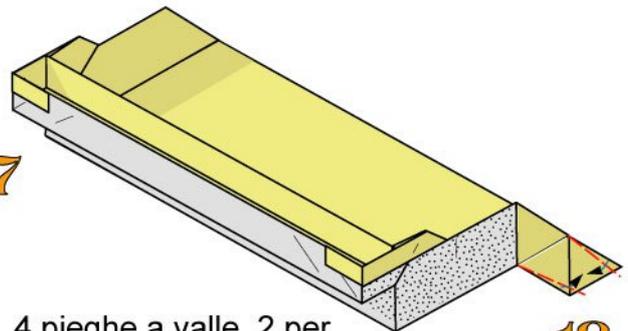
2 pieghe a valle e ruotate

16



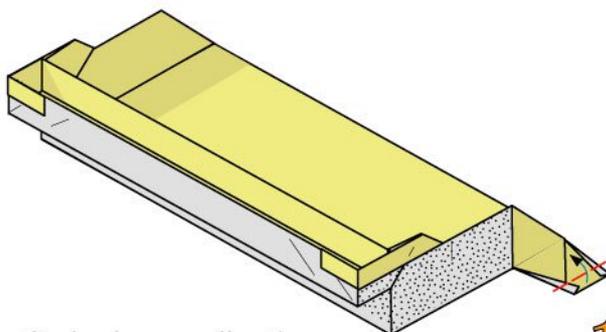
Ripiegando a valle ed a monte aprite 3D

17



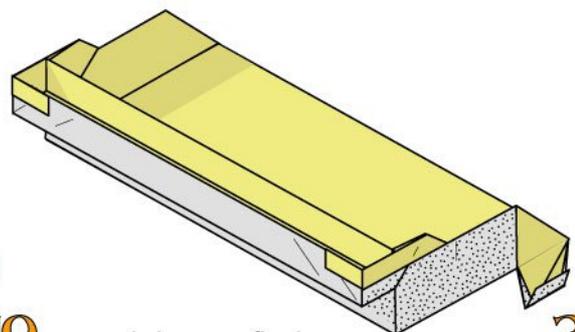
4 pieghe a valle, 2 per appendice e ruotate

18



2 pieghe a valle, 1 per appendice e ruotate

19



poggiolo con fioriera ultimato

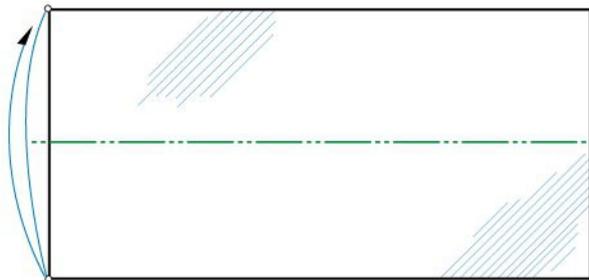
20

BALCONY WITH GLASS PARAPET

This element involves a careful assembling and is made with two joined components: floor plate and parapet.

CONSTRUCTION OF THE PARAPET

Use a half a square sheet of plastic or light acetate.



1 piega a monte



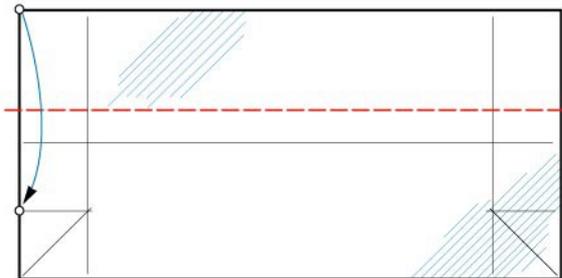
2 pieghe bisettrici a valle



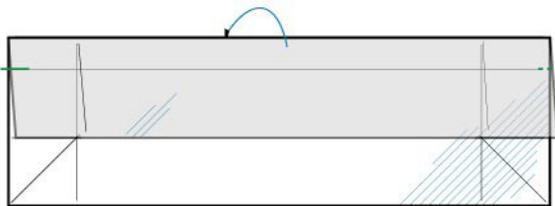
2 pieghe a valle



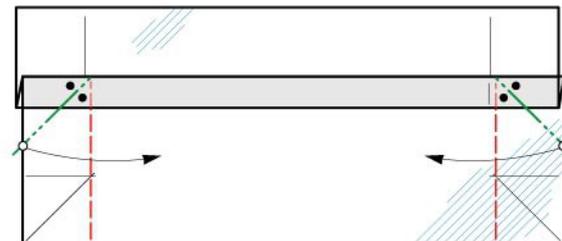
2 pieghe bisettrici a valle



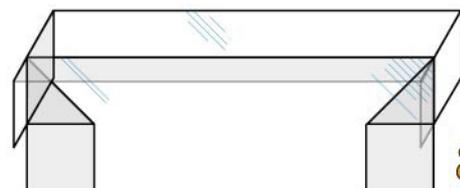
1 piega a valle e ruotate



Ruotate ripiegando a monte

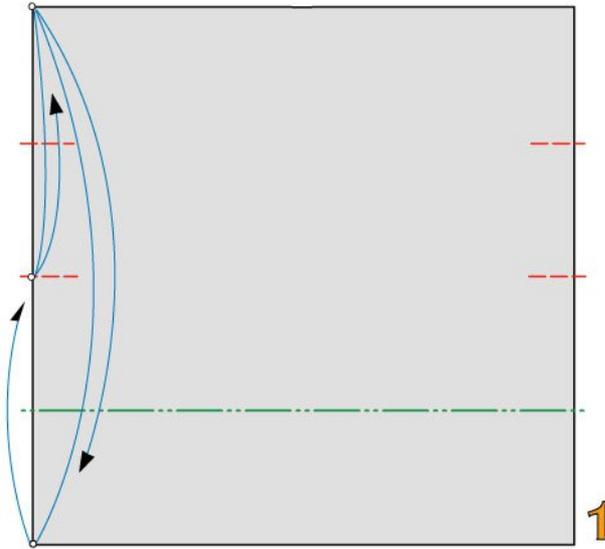


2 pieghe bisettrici a monte e, ripiegando a valle, ruotate 3D



Parapetto in cristallo ultimato

COSTRUZIONE DEL SOLAIO DEL POGGIOLO



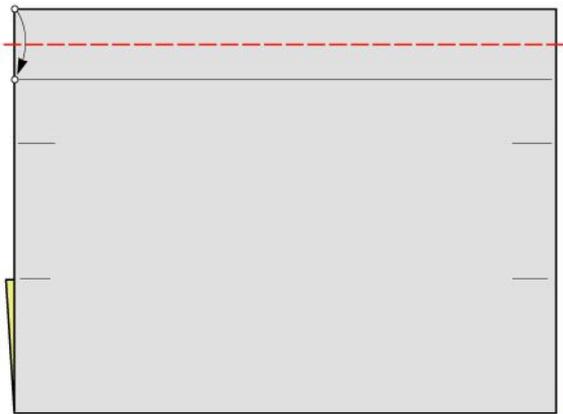
1

4 pieghe a valle, 1 a monte e ruotate il bordo inferiore



2

1 piega a valle



3

1 piega a valle e ruotate



4

Ribaltate



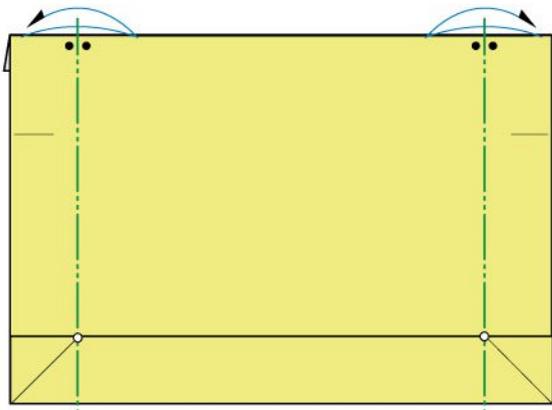
5

1 piega a valle solo sulla sup. in vista e ruotate



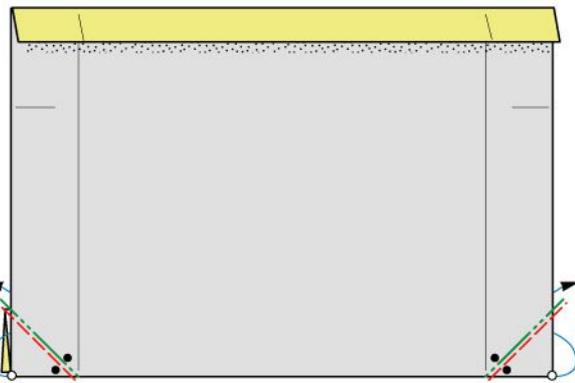
6

2 pieghe bisettrici a valle



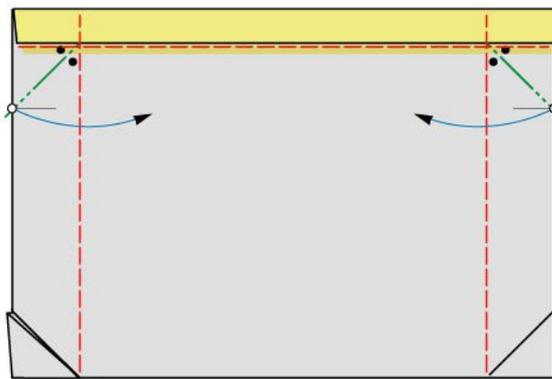
2 pieghe bisettrici a monte e ribaltate

7



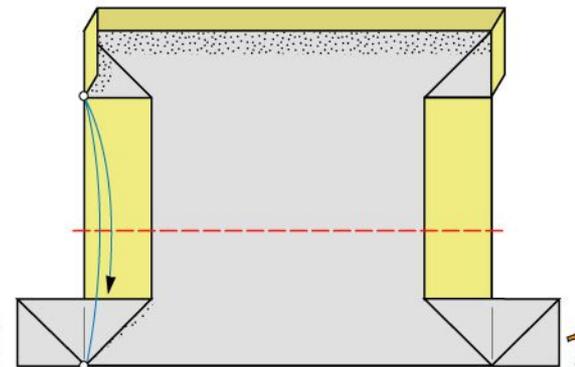
2 pieghe rovesce interne

8



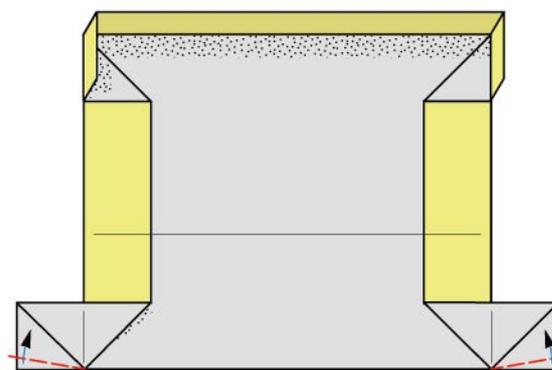
2 pieghe bisettrici a monte e, ripiegando a valle, ruotate 3D

9



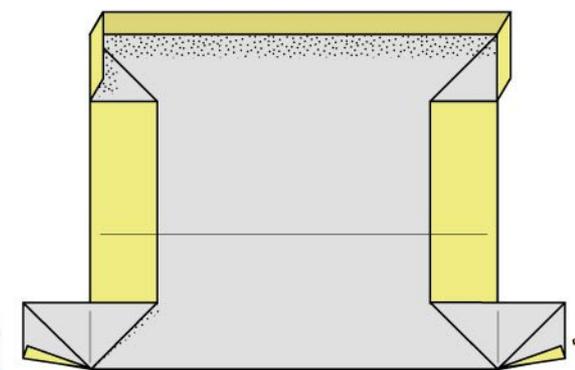
1 piega a valle

10



2 pieghe a valle e ruotate

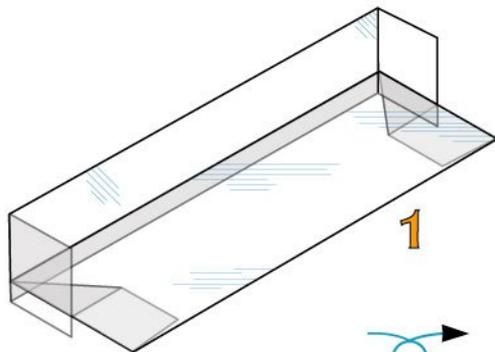
11



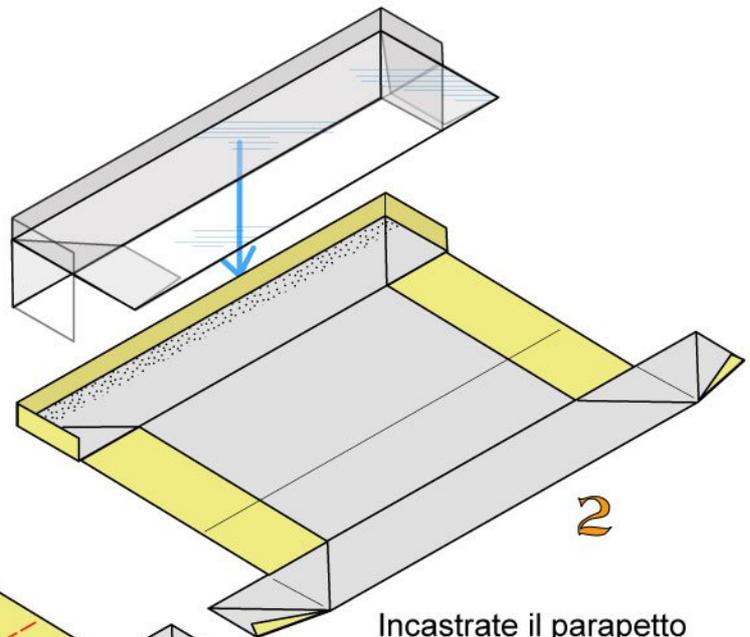
Solaio di poggolo ultimato

12

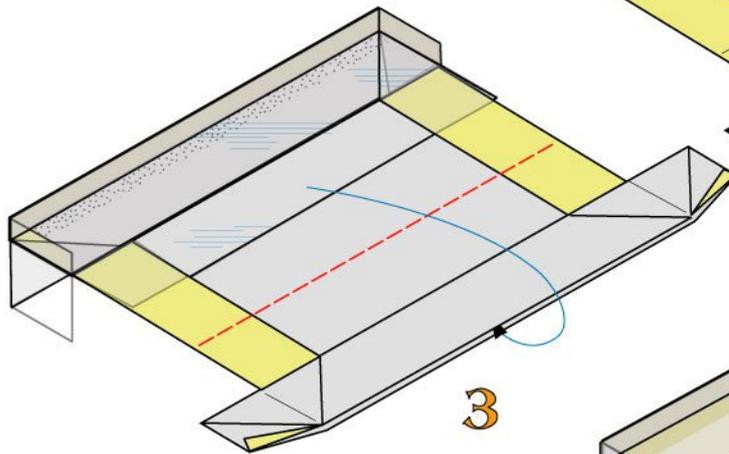
UNIONE DI PARAPETTO E SOLAIO



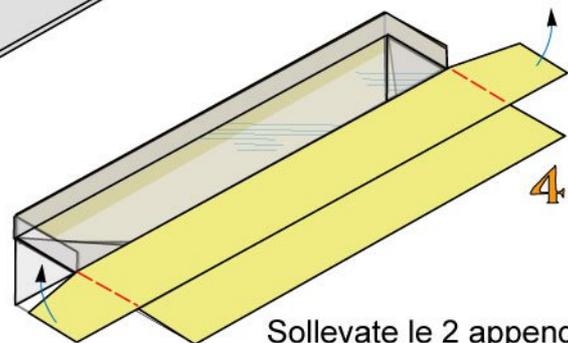
Ribaltate il parapetto



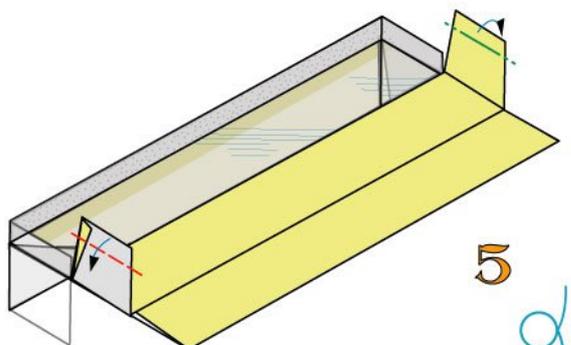
Incastrate il parapetto al solaio



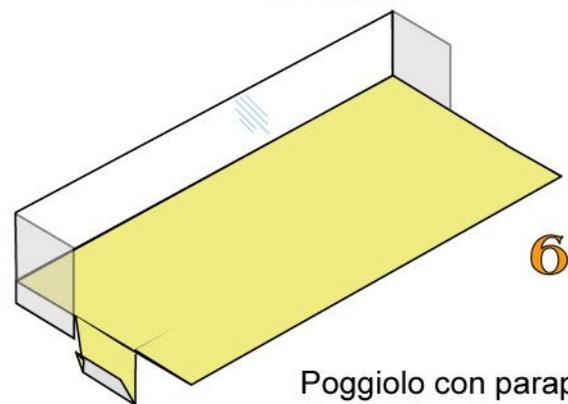
Intascate il bordo del parapetto entro il solaio



Sollevare le 2 appendici del solaio



2 pieghe a valle, ruotate e ribaltate



Poggiolo con parapetto di cristallo ultimato

FOUNDATIONS

These are not foundations in the strict sense of the word, but connections to keep in place the ground floor pilasters. They must be made after having built the first floor in order to adapt the beams to the skeleton frame given that they serve as a base to support it.

These connections are also equipped with flexible joints.

The basic elements of the foundations are three: wide foundation beams, flexible coupling, and narrow foundation beams. The words wide and narrow are here used to differentiate the beams that must join the longest and the shortest sides of the rectangular pilasters.

TRAVE DI FONDAZIONE LARGA



2 piccole pieghe a valle

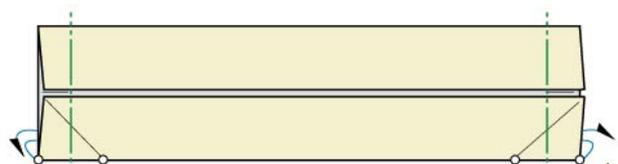


2 pieghe bisettrici a valle

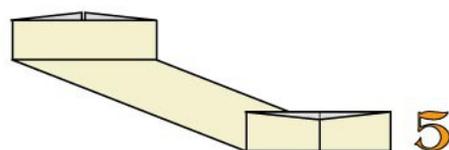


2 pieghe a valle e ruotate

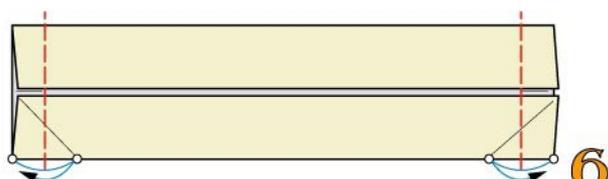
A questo punto ci sono 2 possibilità: nel caso non ci siano pareti soprastanti, cioè nel caso ci sia un porticato vuoto, la fondazione si monta con l'apertura verso il basso, secondo le figure 4 e 5; Se invece bisogna fissare delle pareti, si piega con l'apertura in alto, per avere una tasca disponibile per l'incastro, vedi figure 6 e 7.



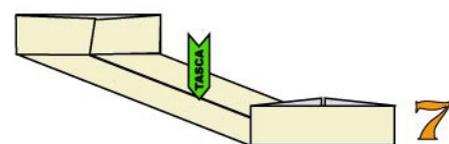
2 pieghe a monte e ruotate 3D



Fondazione larga per portico ultimata



2 pieghe a valle e ruotate 3D



Fondazione larga per parete ultimata

FLEXIBLE JOINT

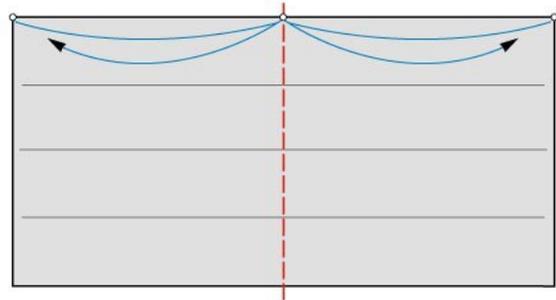
I thought it necessary to study a system for connecting the dimensionally flexible pillar base, since the frame dimensions cannot be determined.

The use of this joint allows the foundation to adapt dimensionally to each span of the frame.



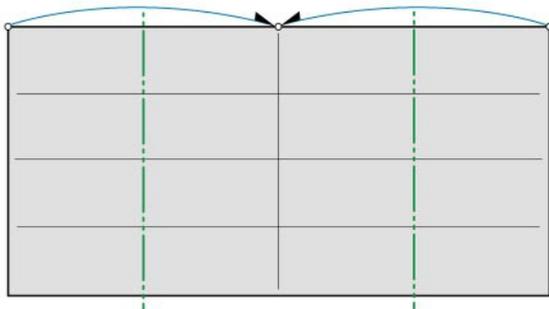
1

3 pieghe a valle



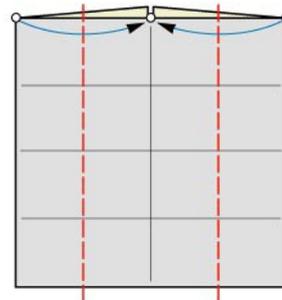
2

1 piega a valle



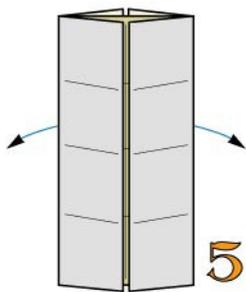
3

2 pieghe a monte e ruotate



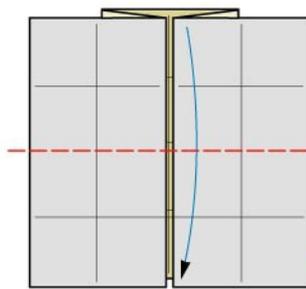
4

2 pieghe a valle e ruotate



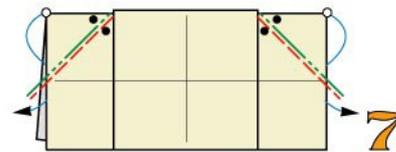
5

Riaprite



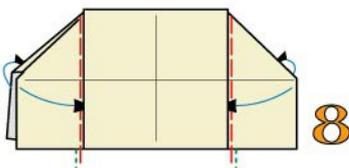
6

1 piega a valle e ruotate



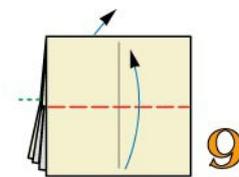
7

2 pieghe rovesce interne



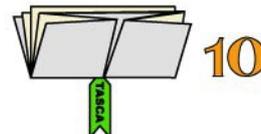
8

Ripiegando a valle ed a monte intascate le 4 alette



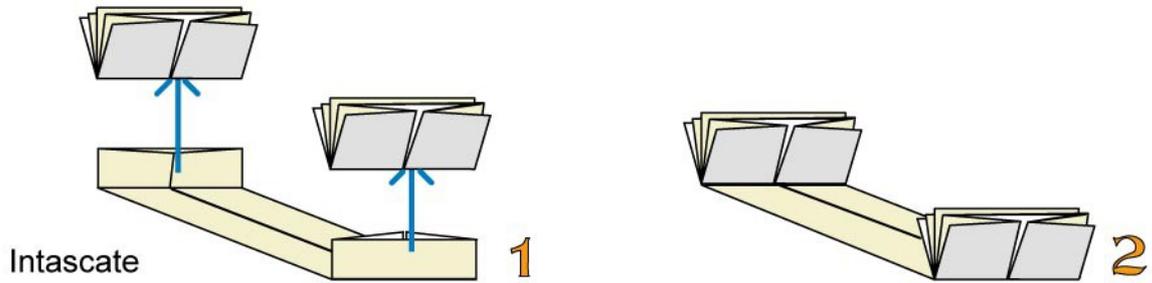
9

Aprite ripiegando a valle



10

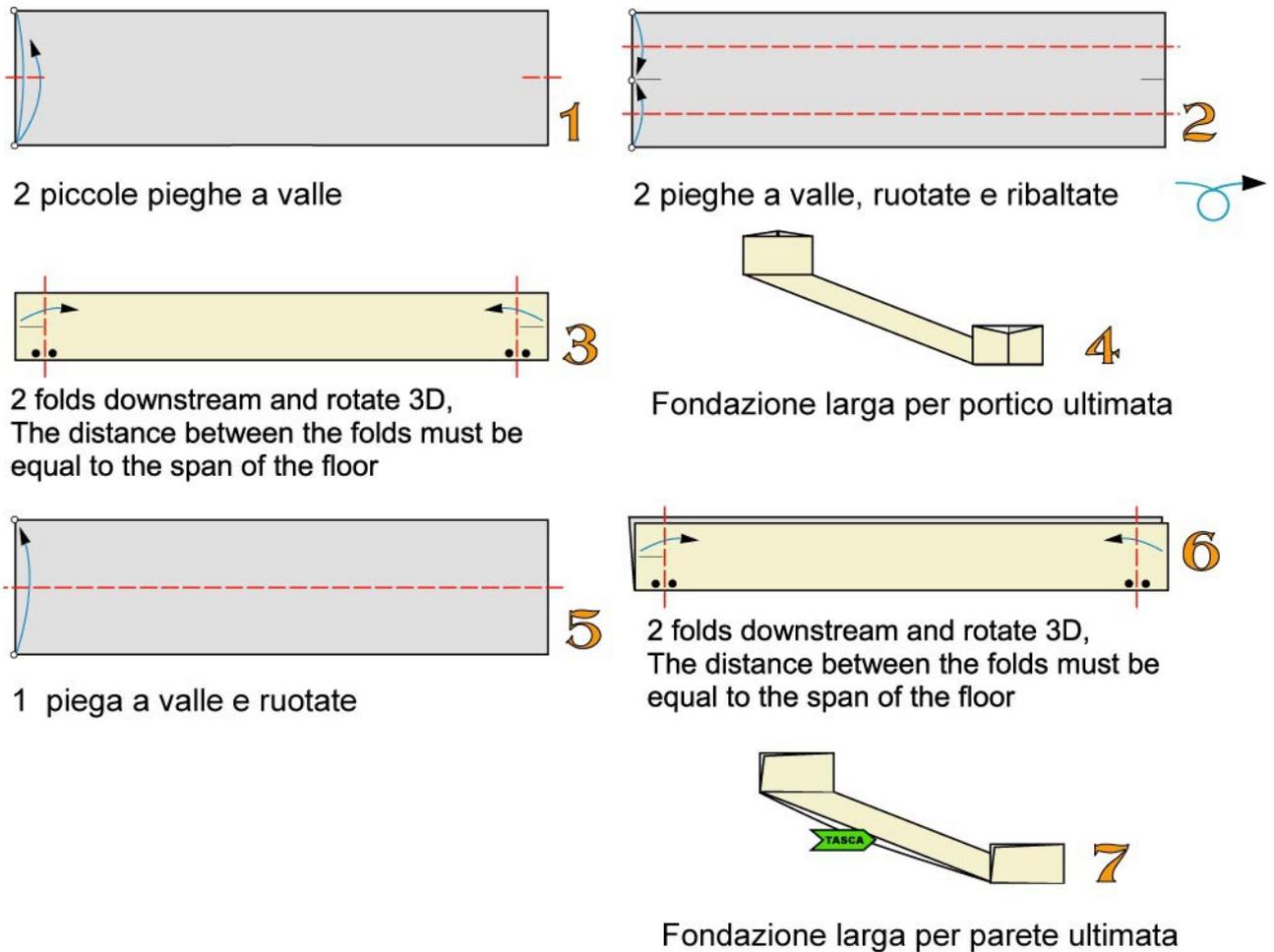
MONTAGGIO DI GIUNTI SULLA FONDAZIONE LARGA



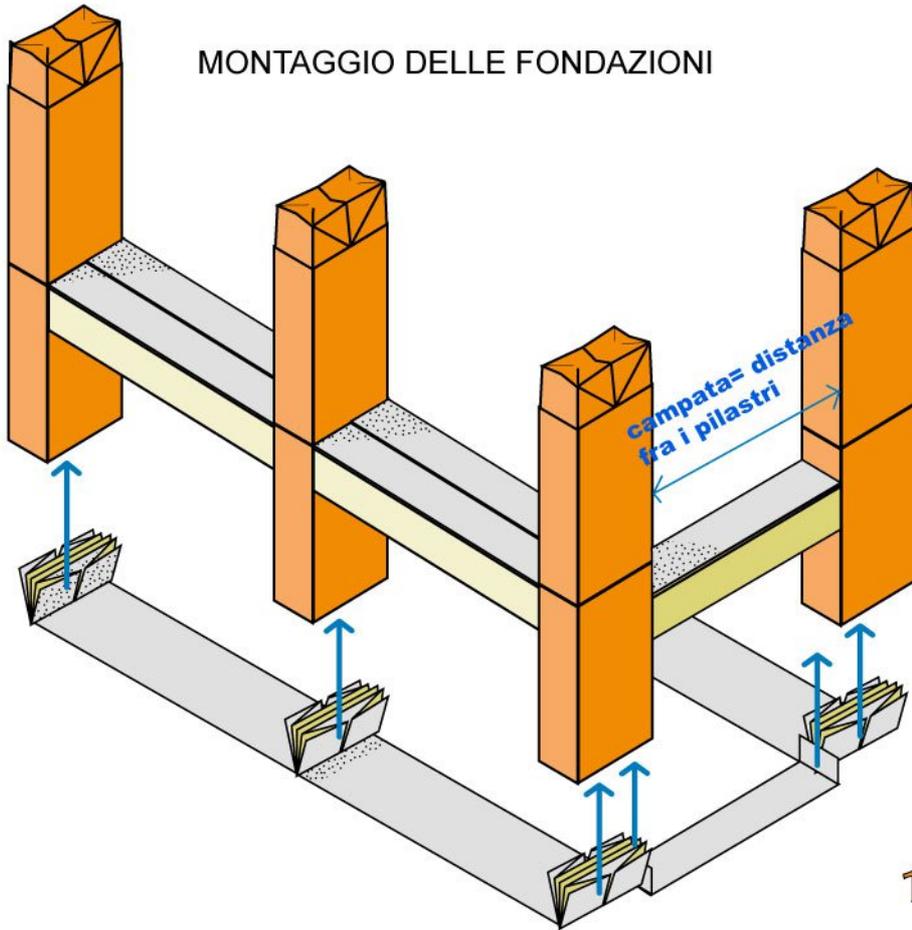
NARROW FOUNDATION BEAM

Also in this case there are 2 possibilities: if there are no walls above, that is to create a porch, the foundation is mounted with the opening downwards, fig. 1,2,3,4.

If, on the other hand, you need to fix the walls, it folds with the side opening, to have a pocket available for the joint, fig. 5,6,7.

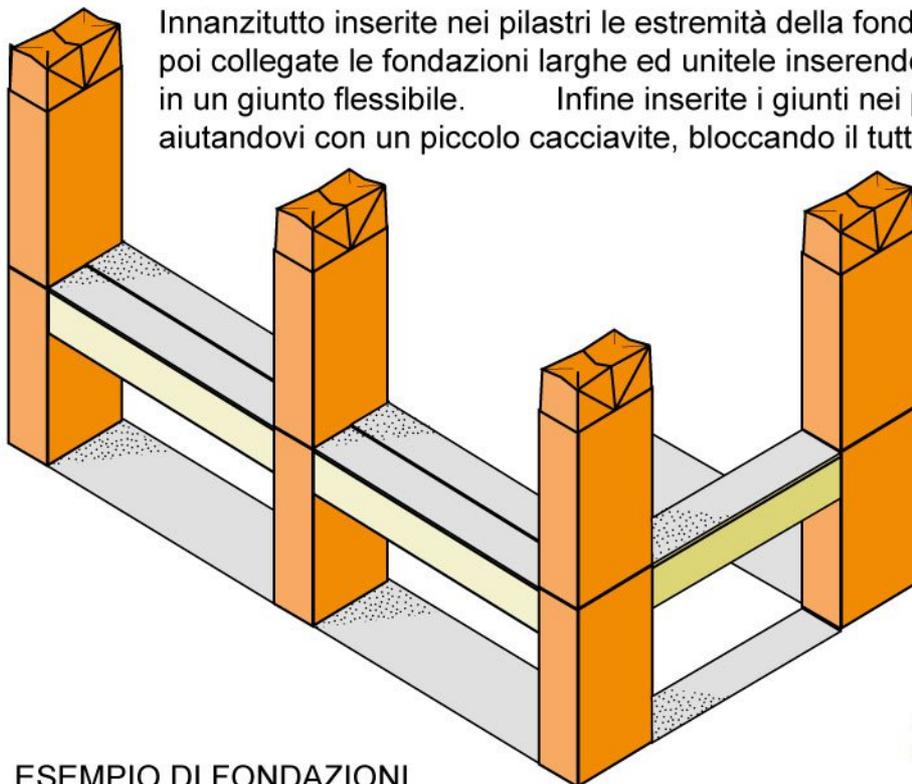


MONTAGGIO DELLE FONDAZIONI



1

Innanzitutto inserite nei pilastri le estremità della fondazione stretta, poi collegate le fondazioni larghe ed unitele inserendone gli estremi in un giunto flessibile. Infine inserite i giunti nei pilastri, magari aiutandovi con un piccolo cacciavite, bloccando il tutto.

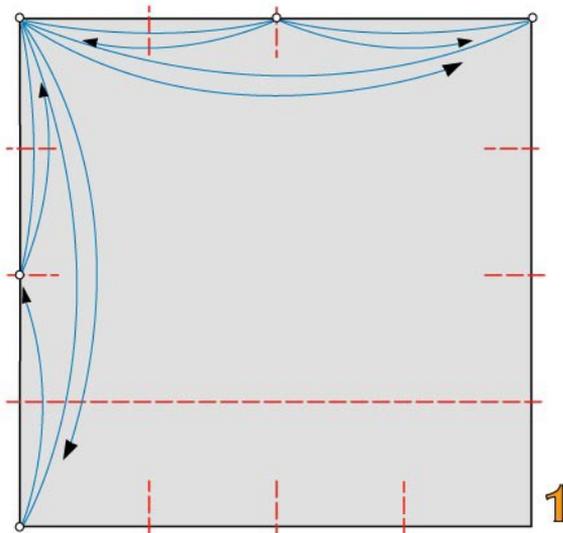


2

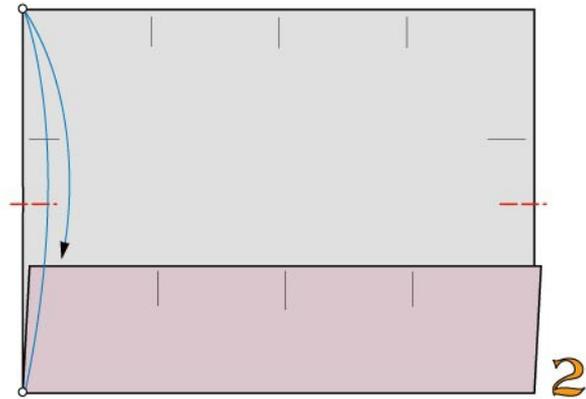
ESEMPIO DI FONDAZIONI COLLEGATE AL TELAIO

WALL WITHOUT WINDOWS - 1

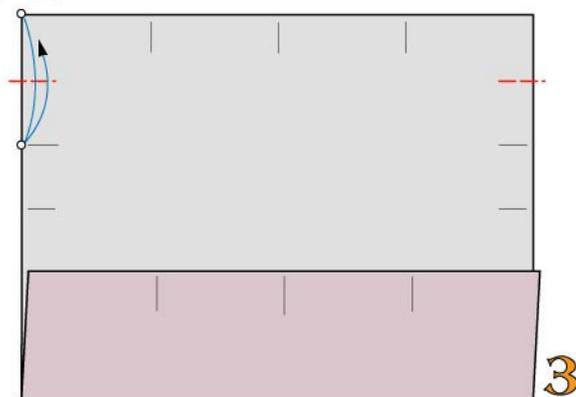
In modern architecture, walls have lost their original load-bearing function and have become simple elements to delimit spaces. A wall without openings may be replaced by a glass wall using a light plastic or acetate sheet. You can also obtain great effects by drawing brick or stone decorations on the sheet before folding.



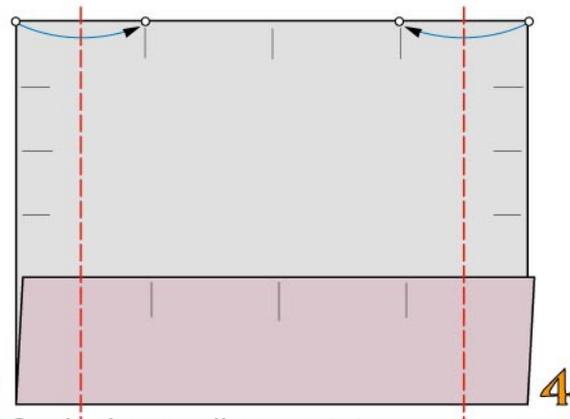
1
11 pieghe a valle e ruotate il bordo inferiore



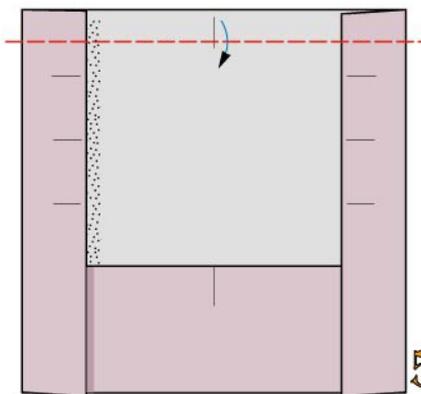
2
2 piccole pieghe a valle



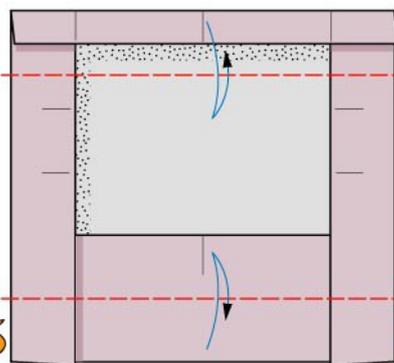
3
2 piccole pieghe a valle



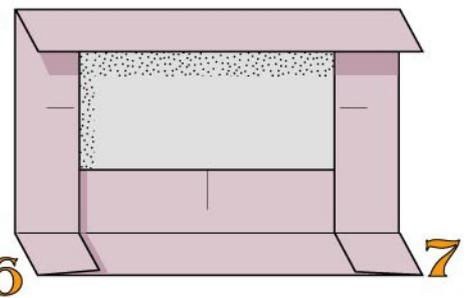
4
2 pieghe a valle e ruotate



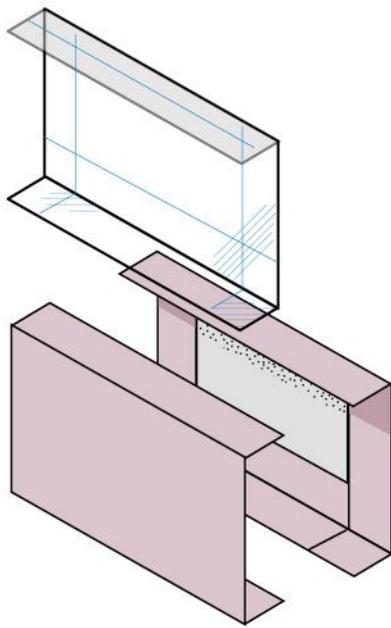
5
1 piega a valle e ruotate



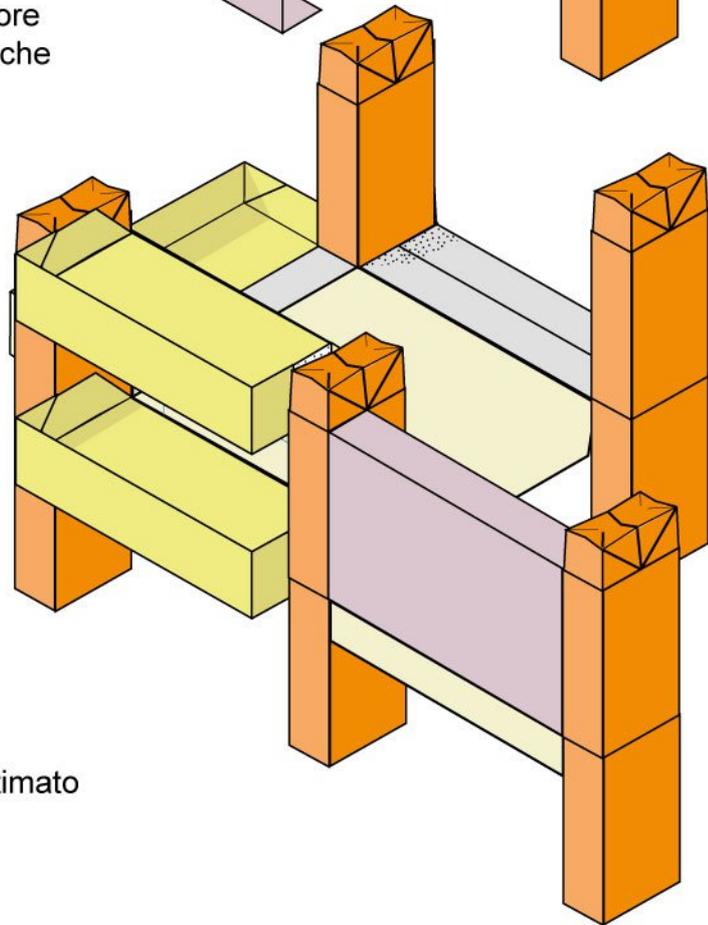
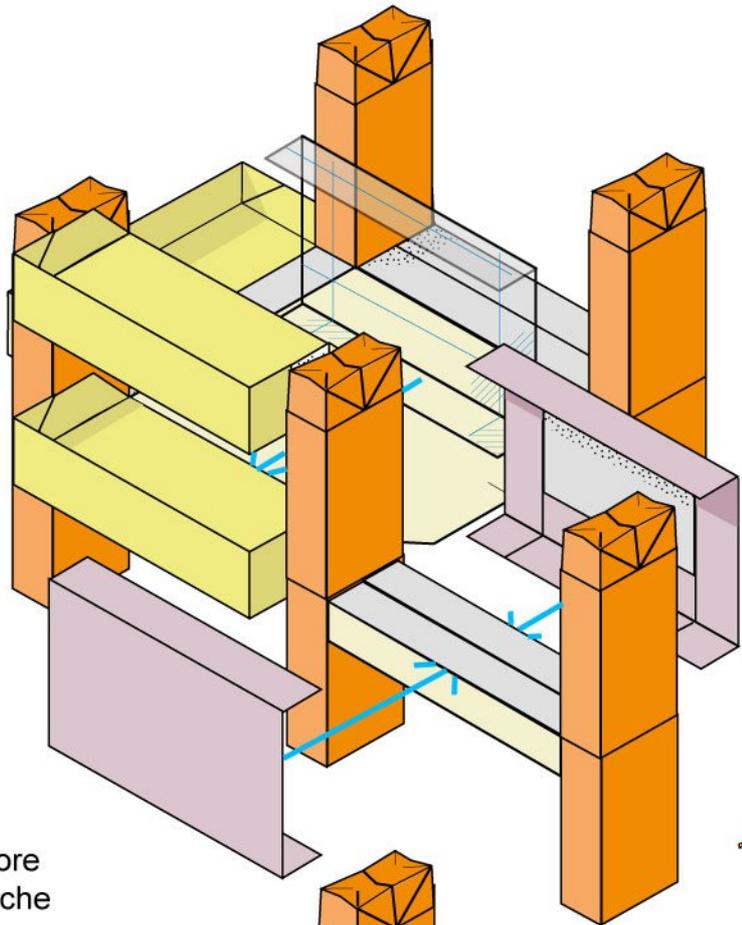
6
2 pieghe a valle



7
Parete piena 1 ultimata



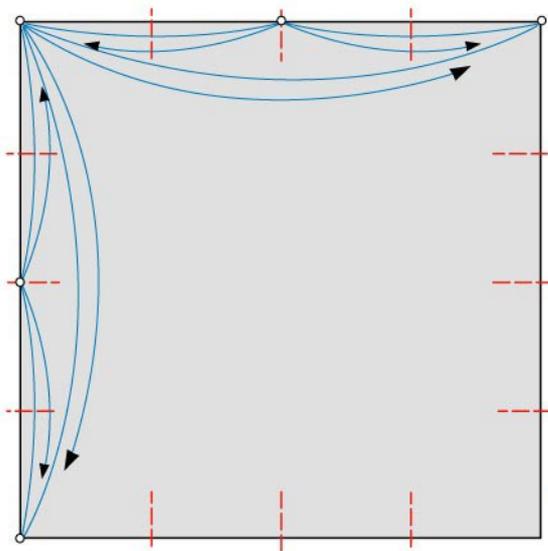
Incastrate le pareti nelle tasche delle travi. Se volete dare spessore alle pareti fissate un pannello anche all'interno



Montaggio di parete e vetrata ultimato

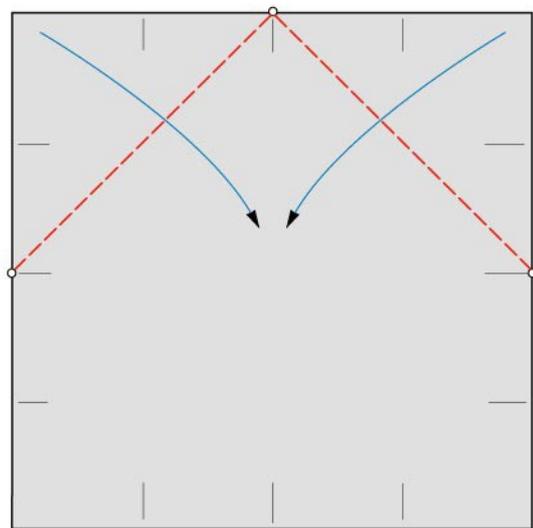
WALL WITHOUT WINDOWS -

We build a different kind of wall without openings.



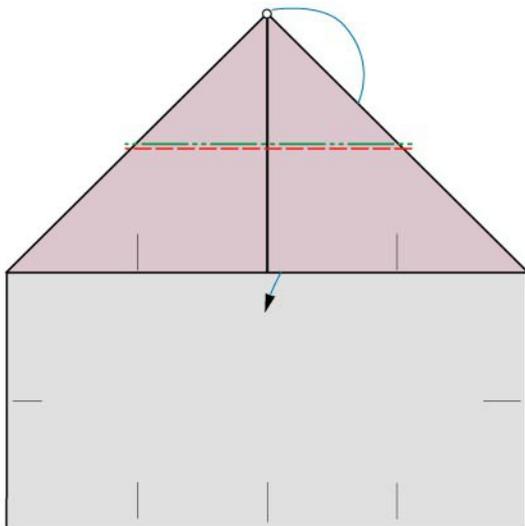
12 piccole pieghe a valle

1



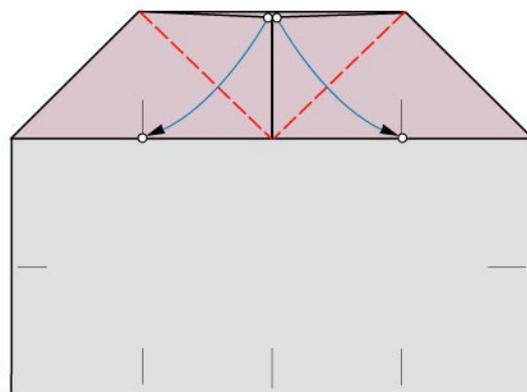
2 pieghe a valle e ruotate

2



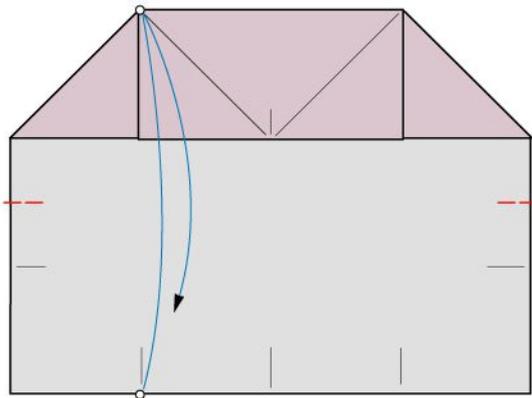
1 piega rovescia interna

3



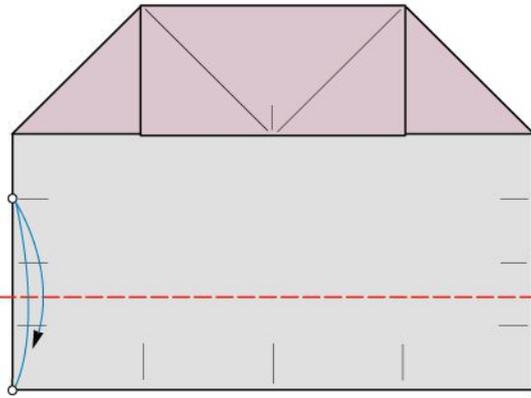
2 pieghe a valle e ruotate

4



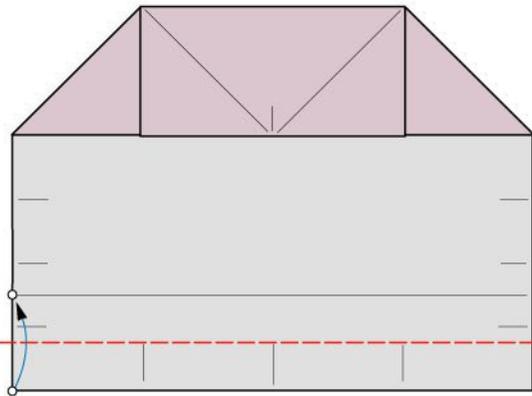
2 piccole pieghe a valle

5



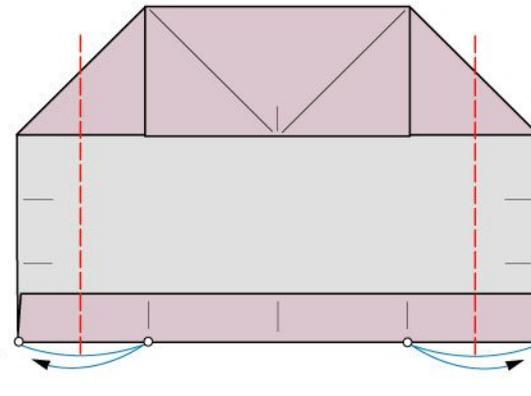
1 piega a valle

6



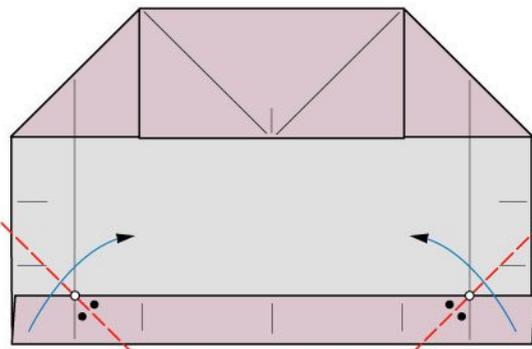
1 piega a valle e ruotate

7



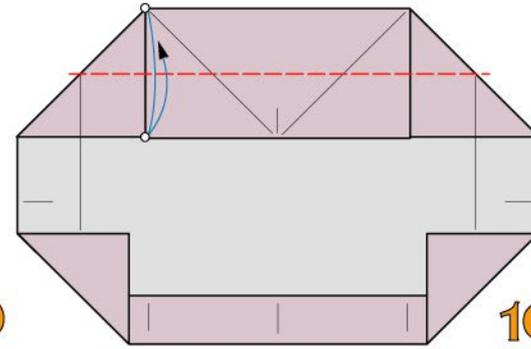
2 pieghe a valle

8



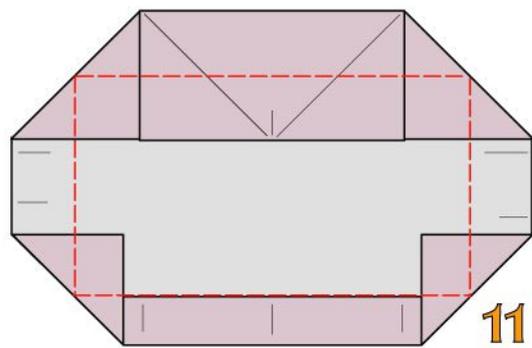
2 pieghe bisettrici a valle e ruotate

9



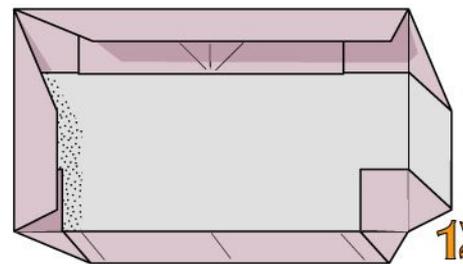
1 piega a valle

10



4 pieghe a valle e ruotate 3D

11



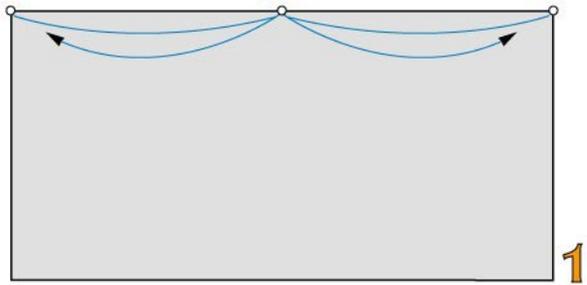
Parete piena 1 ultimata

12

WALL WITH ONE WINDOW

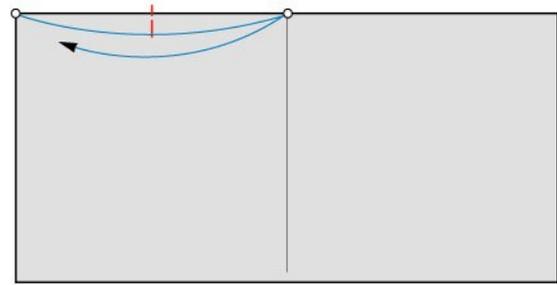
This panel fits a large opening and can be inserted as a window between two pilasters, or, upside down, as a door to the balcony.

It is made by joining two symmetrical pieces obtained from the ordinary rectangular sheets.



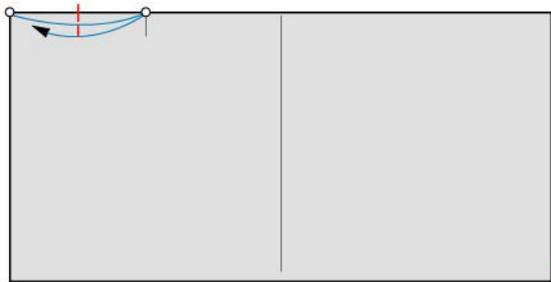
1

Elemento sinistro: 1 piega a valle



2

1 piccola piega a valle



3

1 piccola piega a valle



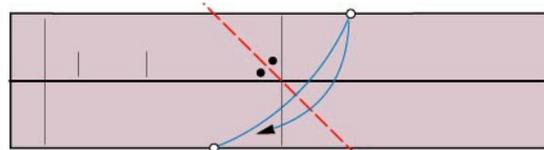
4

1 piega a valle



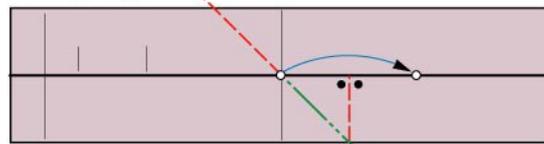
5

3 pieghe a valle e ruotate



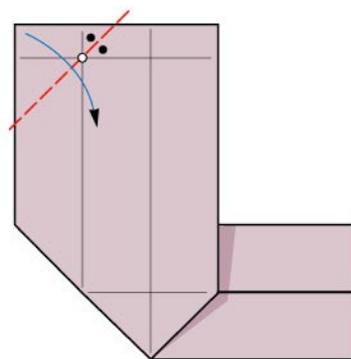
6

1 piega bisettrice a valle



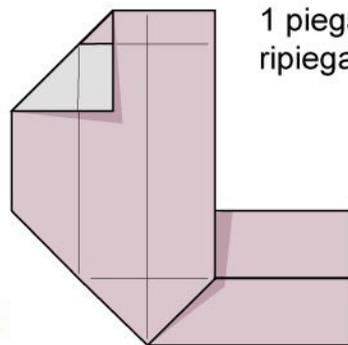
7

1 piega bisettrice a valle e ruotate ripiegando a monte



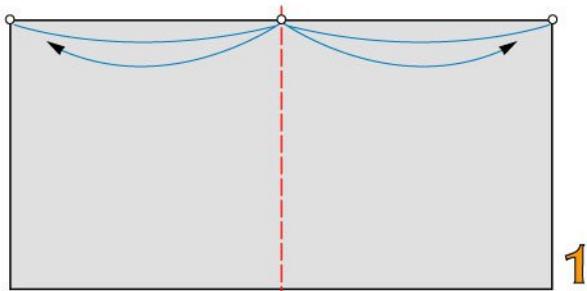
8

1 piega bisettrice a valle e ruotate

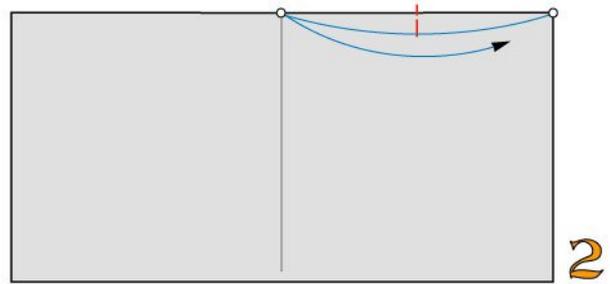


9

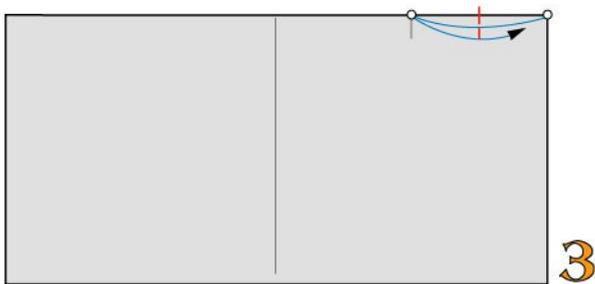
Elemento sinistro ultimato



Elemento destro: 1 piega a valle



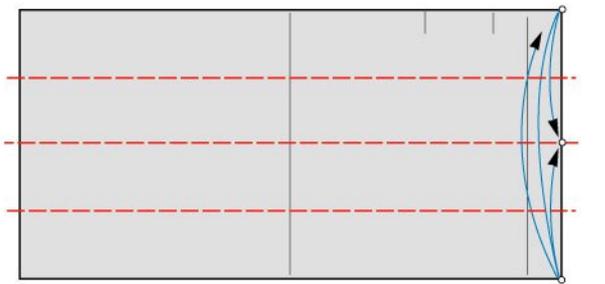
1 piccola piega a valle



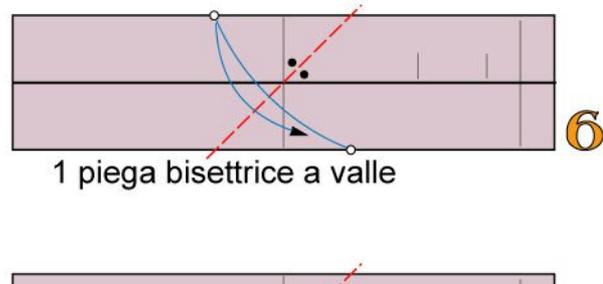
1 piccola piega a valle



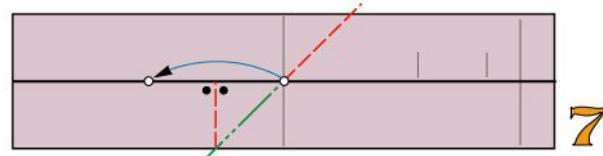
1 piega a valle



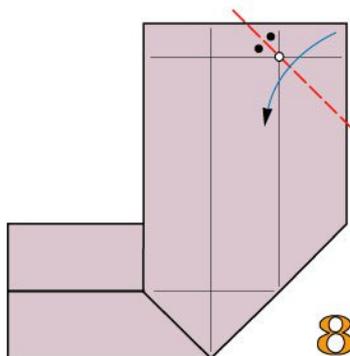
3 pieghe a valle e ruotate



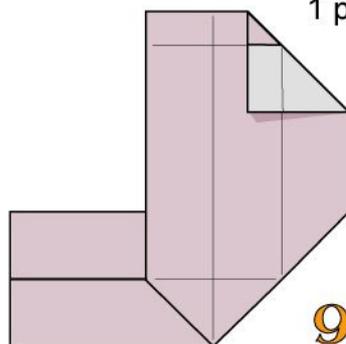
1 piega bisettrice a valle



1 piega bisettrice a valle e ruotate
ripiegando a monte

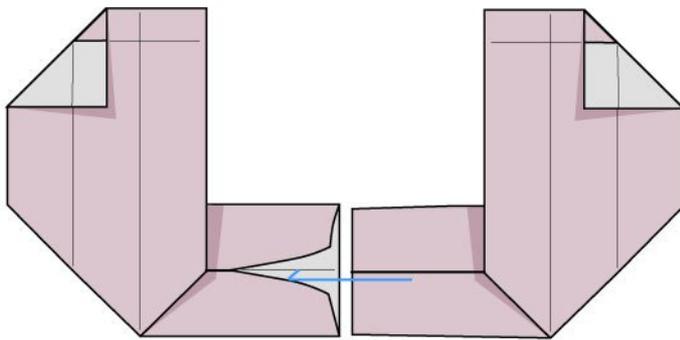


1 piega bisettrice a valle e ruotate

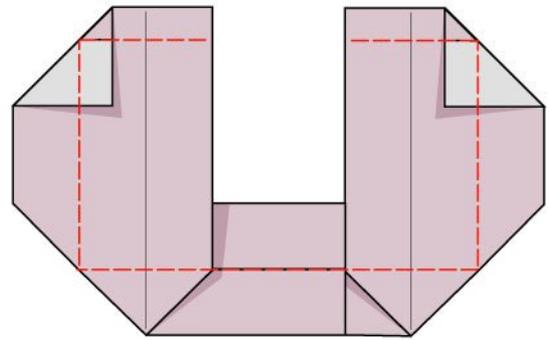


Elemento sinistro ultimato

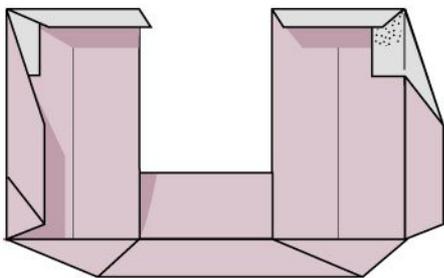
UNIONE DEI 2 ELEMENTI



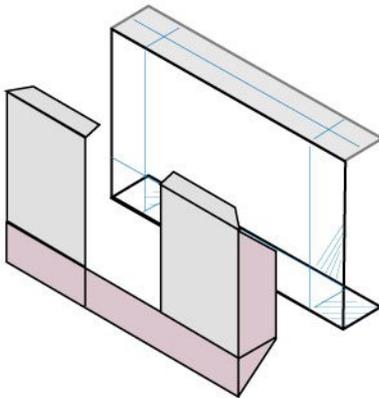
Intascate le parti orizzontali fino in fondo



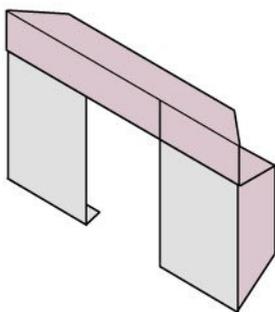
5 pieghe a valle e ruotate 3D



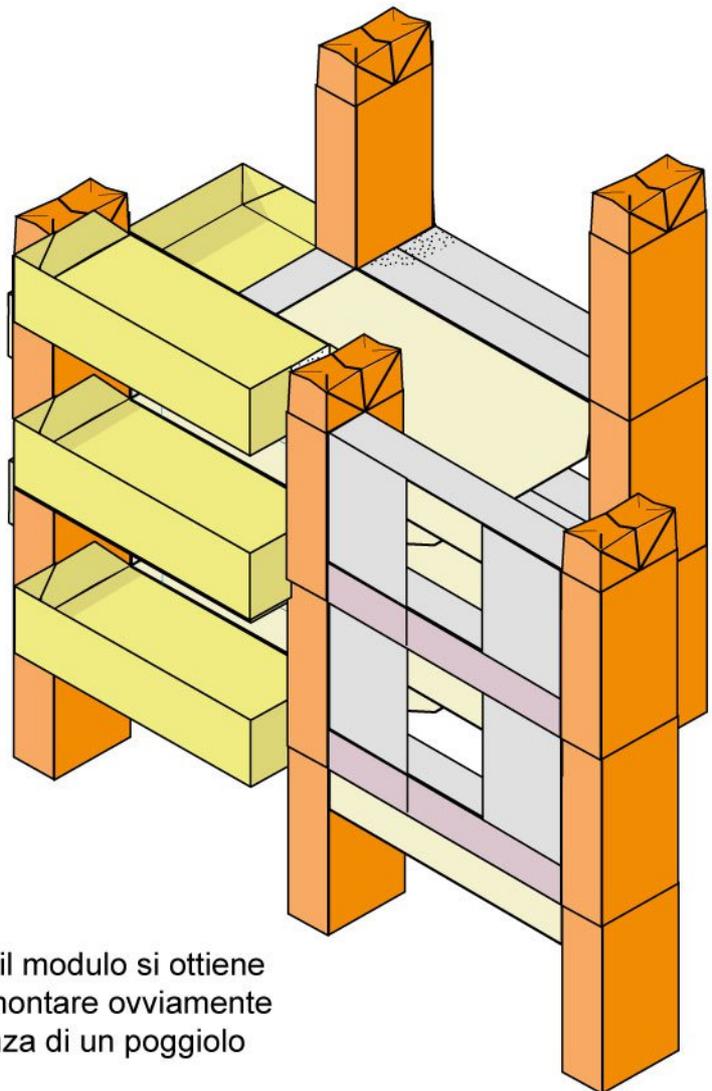
Parete con grande finestra ultimata



È possibile inserire all'interno una parete trasparente per simulare un serramento con vetro



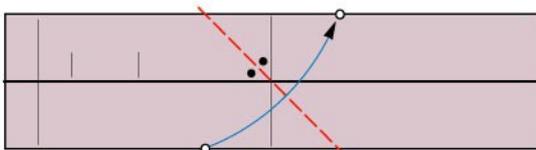
Capovolgendo il modulo si ottiene una porta, da montare ovviamente in corrispondenza di un poggiatesta



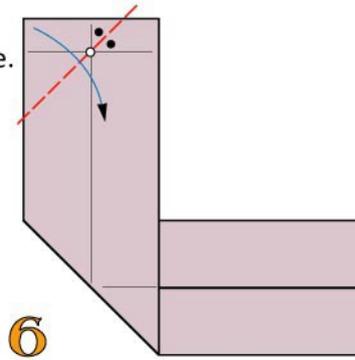
WALL WITH TWO WINDOWS

This panel with 2 openings (windows) can be installed between two pilasters, or upside down, it can become a wall with two doors leading to a balcony.

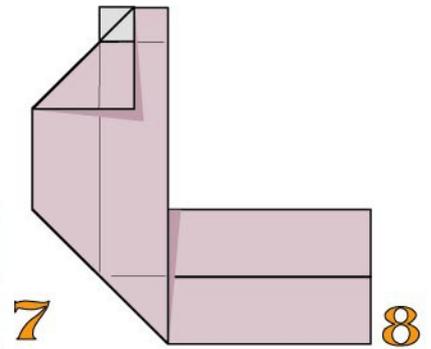
This wall is built with 3 joined elements: 2 symmetrical sides and 1 at the centre.
Three ordinary rectangular sheets are required



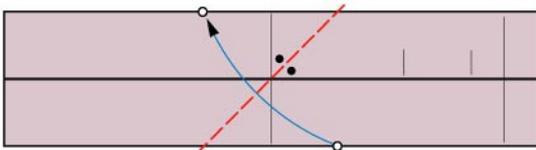
Elemento laterale sinistro: partite dalla fig. n. 5 di el. sin. di parete con una finestra.
1 piega bisettrice a valle e ruotate



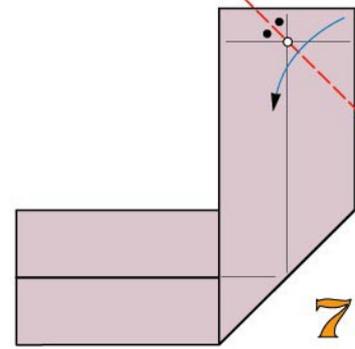
6 1 piega bisettrice a valle e ruotate



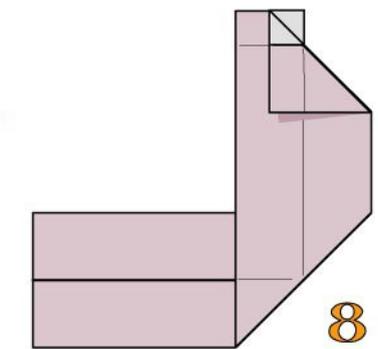
7 elemento laterale sinistro ultimato 8



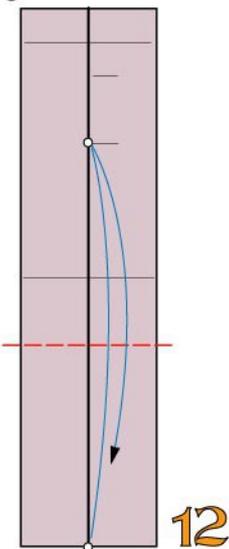
Elemento laterale destro.
1 piega bisettrice a valle e ruotate



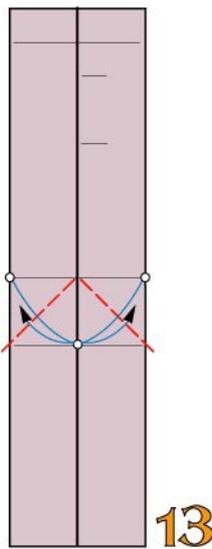
6 1 piega bisettrice a valle e ruotate



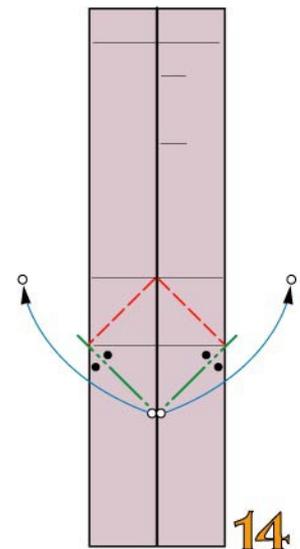
7 elemento laterale destro ultimato 8



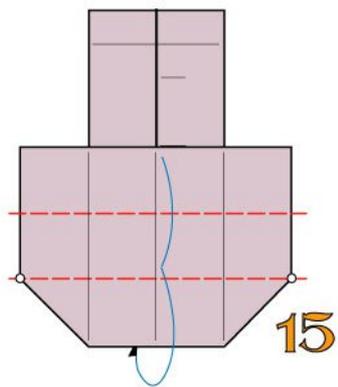
Elemento centrale. Partite dalla fig. n.5 di "Parete con una finestra".
1 piega a valle



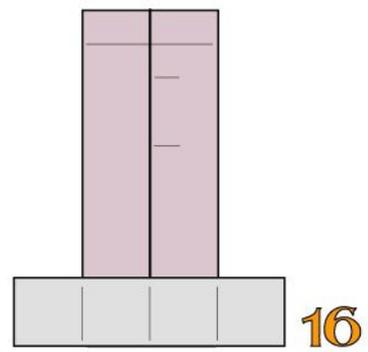
13 2 pieghe a valle



14 2 pieghe a monte e, ripiegando a valle, ruotate aprendo

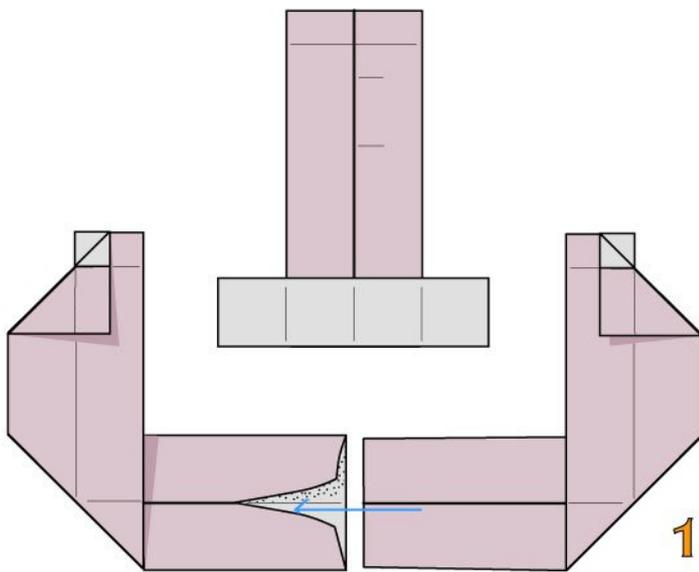


2 pieghe a valle e ruotate

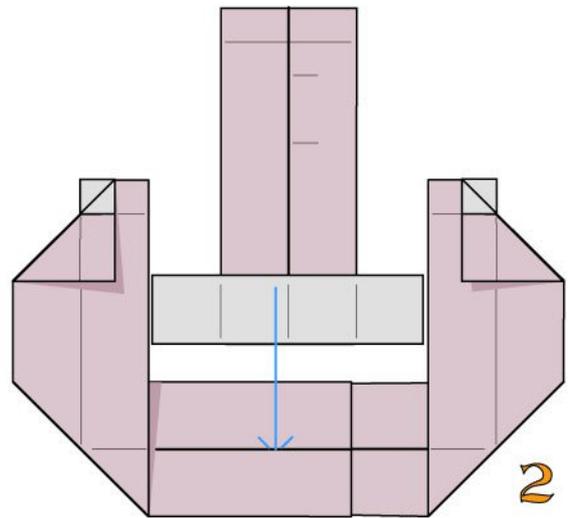


elemento centrale ultimato

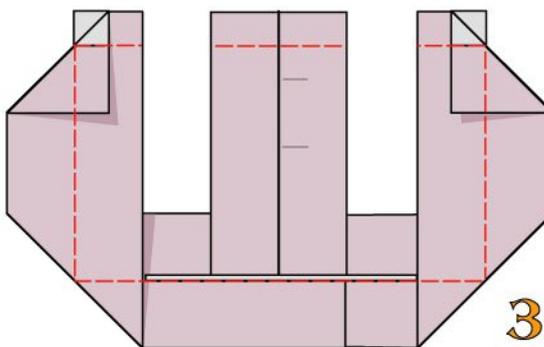
UNIONE DEI 3 ELEMENTI



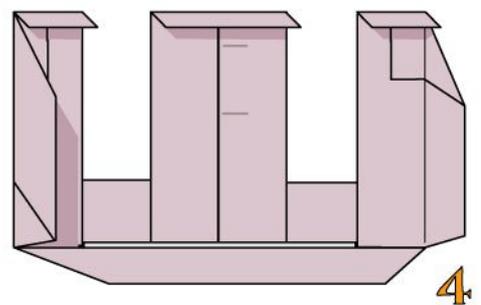
Intascate le parti orizzontali



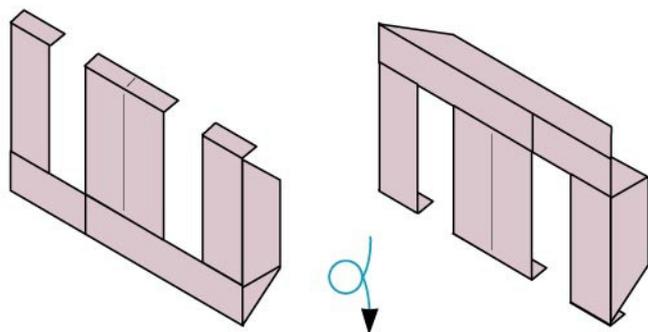
Intascate l' elemento centrale



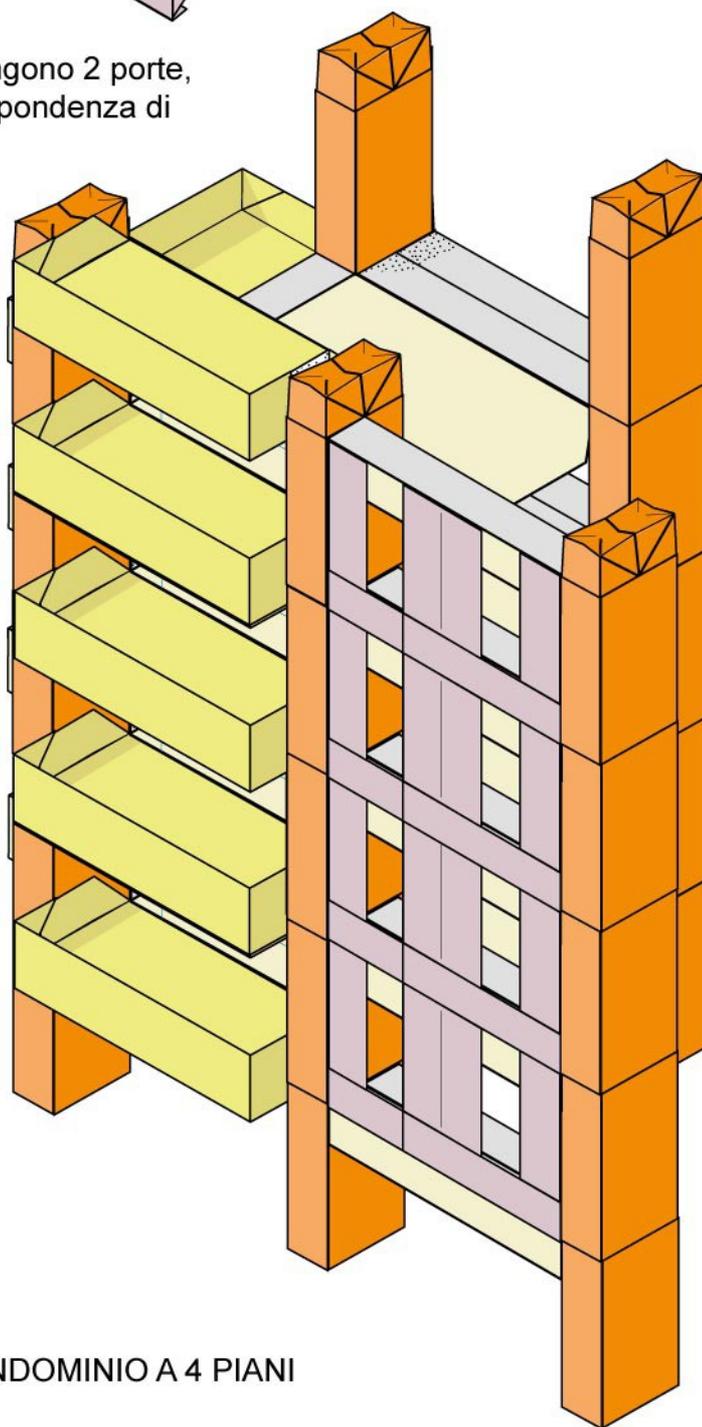
6 pieghe a valle e ruotate 3D



Parete con 2 finestre ultimata



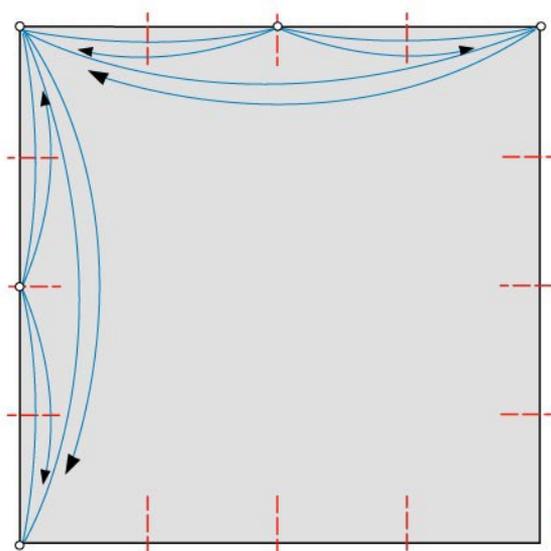
Capovolgendo il modulo si ottengono 2 porte, da montare ovviamente in corrispondenza di un poggiatesta



ESEMPIO DI PARETE DI CONDOMINIO A 4 PIANI

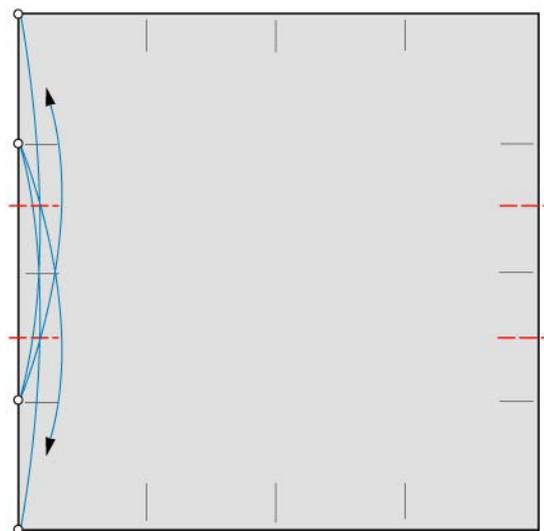
RIGHT TYMPANUM

A tympanum is the triangular or semi-circular decorative wall surface over an entrance, door or window.



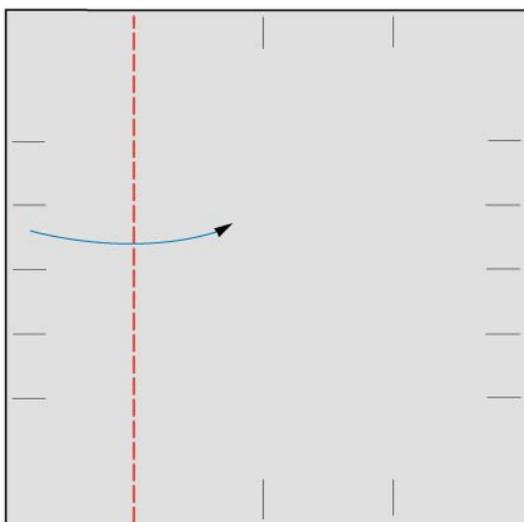
12 piccole pieghe a valle

1



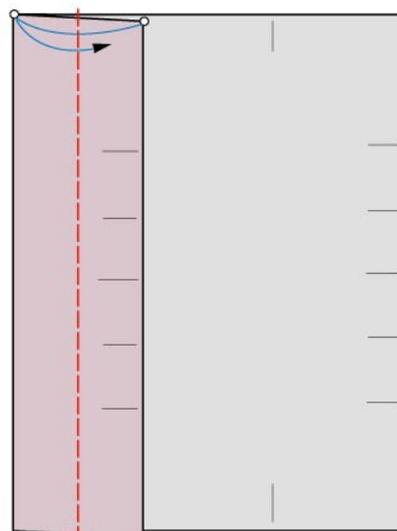
4 piccole pieghe a valle

2



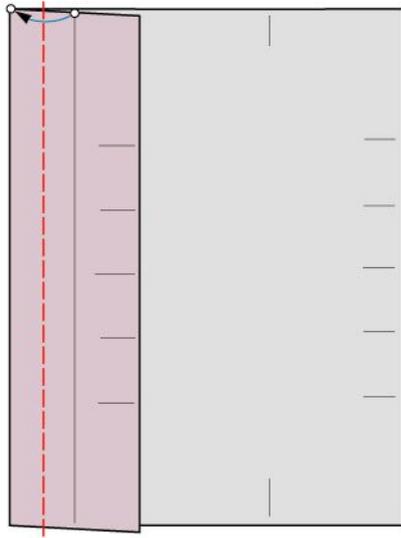
1 piega a valle e ruotate

3



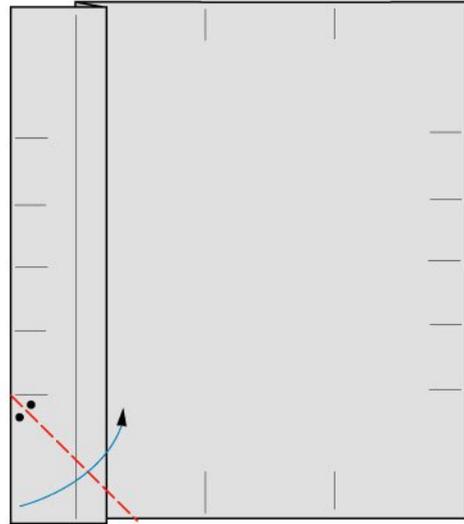
1 piega a valle solo sulla sup.
in vista e ruotate

4



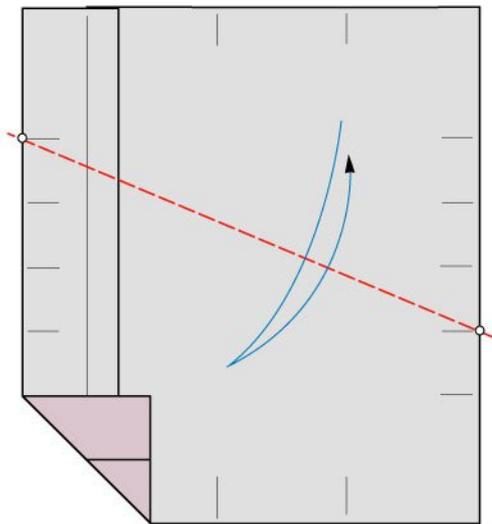
5

1 piega a valle e ruotate



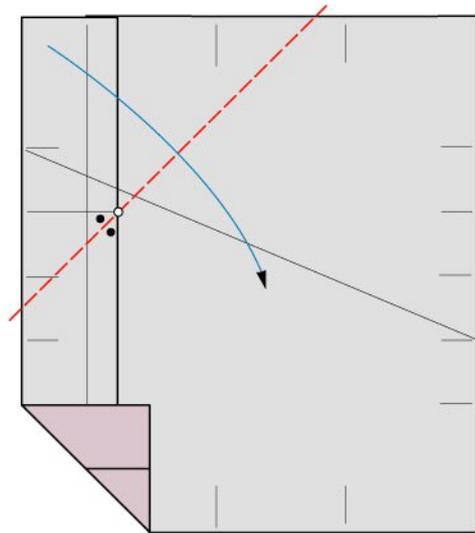
6

1 piega bisettrice a valle e ruotate



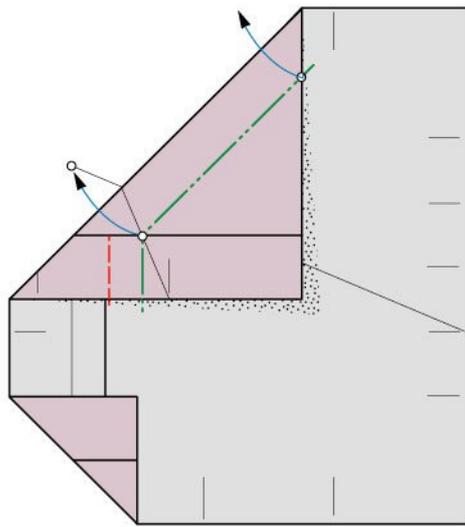
7

1 piega a valle



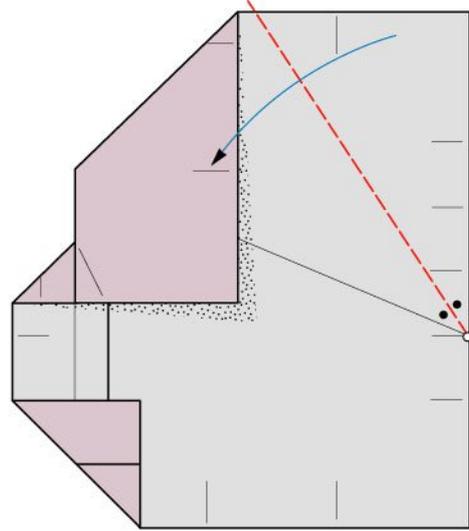
8

1 piega bisettrice a valle e ruotate



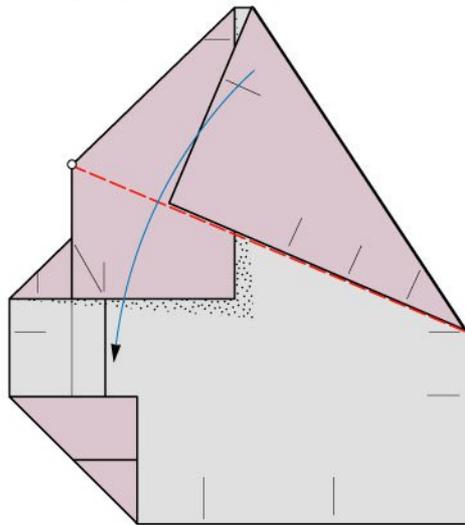
9

Strana piega rovescia che si ottiene con 2 pieghe a monte ed 1 a valle



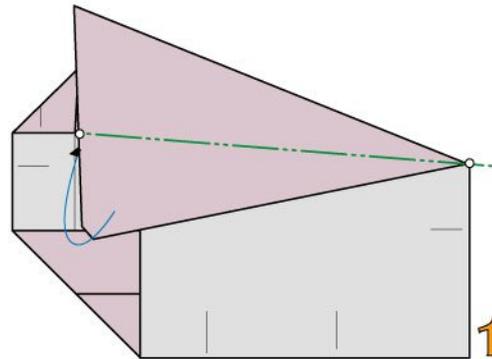
10

1 piega bisettrice a valle e ruotate



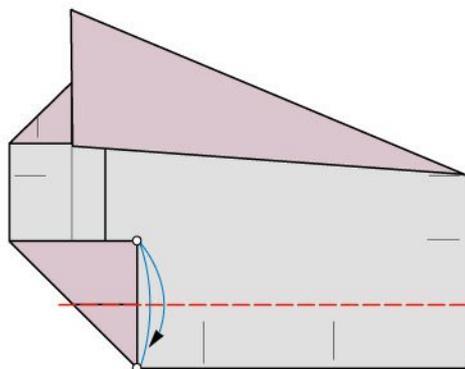
11

1 piega bisettrice a valle e ruotate



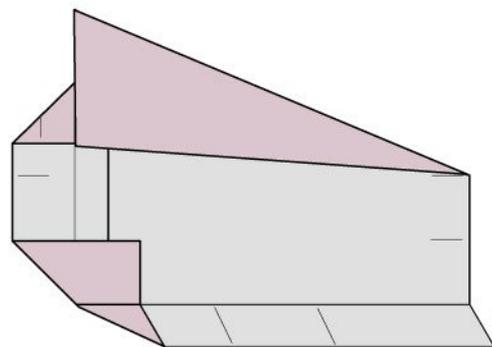
12

1 piega a monte e ruotate intascando



13

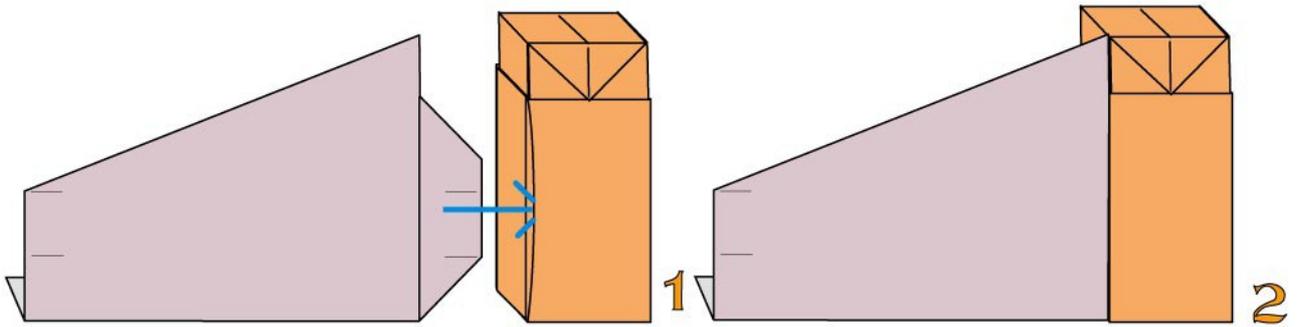
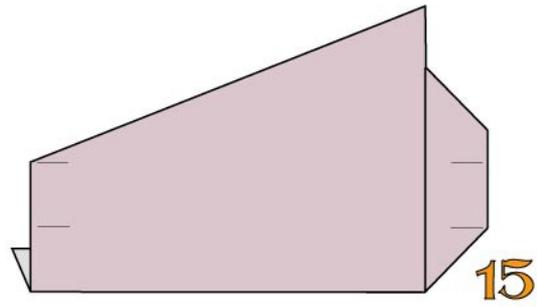
1 piega a valle e ruotate 3D



14

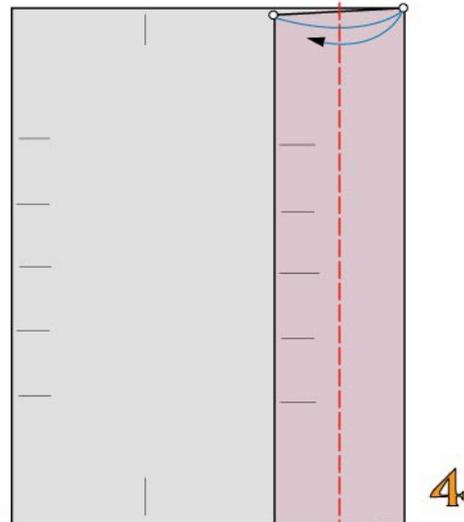
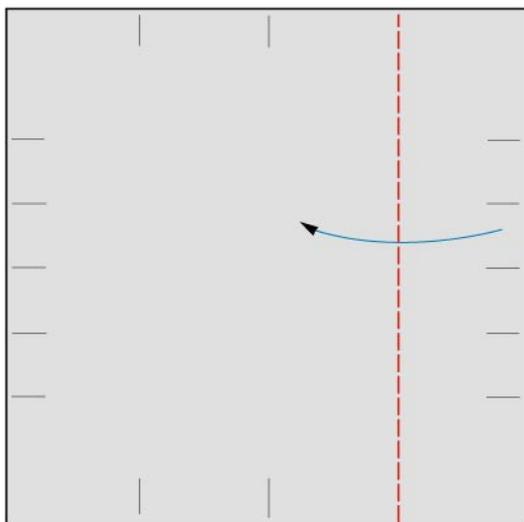
Timpano ultimato, vista interna.
Ribaltate





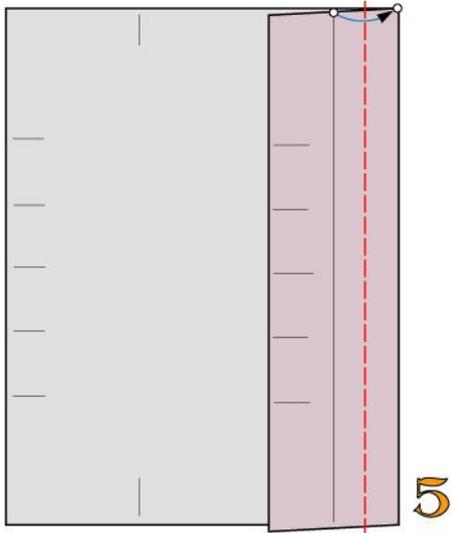
Il bordo inferiore del timpano si inserisce nella trave e quello verticale nel pilastro

LEFT TYMPANUM

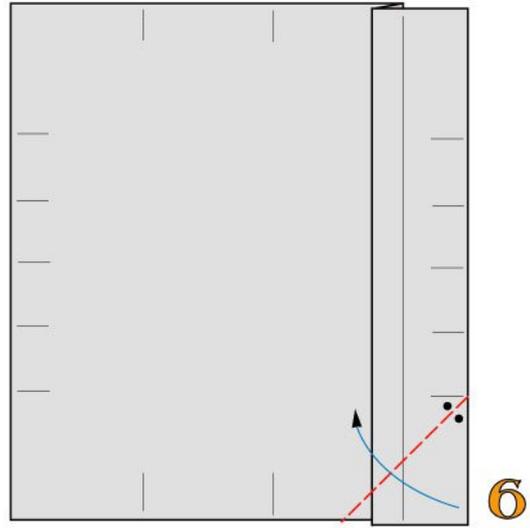


Partite dalla fig. n. 2 del timpano destro.
1 piega a valle e ruotate

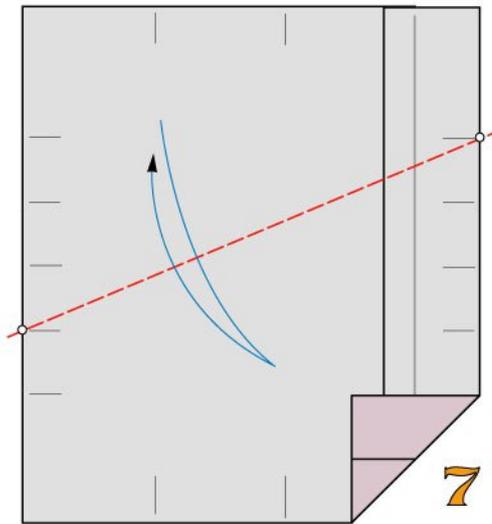
1 piega a valle solo sulla sup.
in vista e ruotate



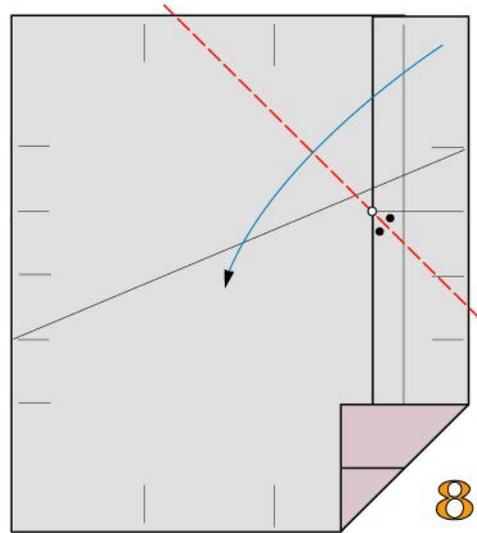
1 piega a valle e ruotate



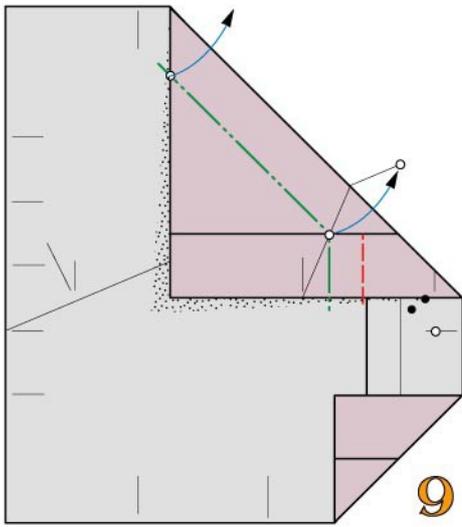
1 piega bisettrice a valle e ruotate



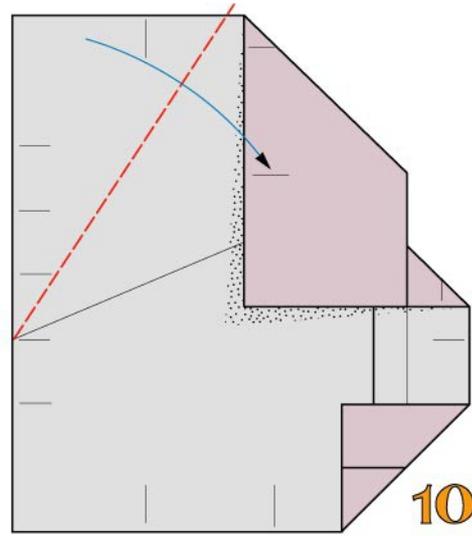
1 piega a valle



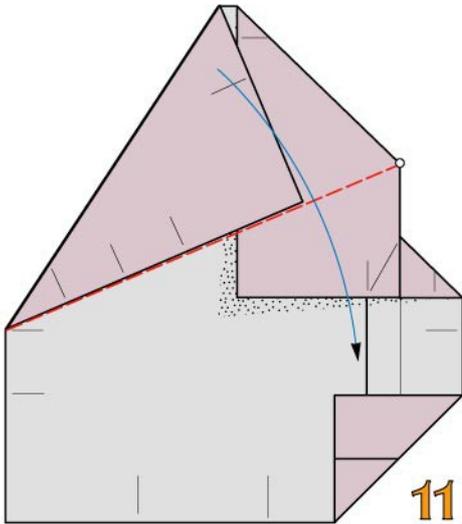
1 piega bisettrice a valle e ruotate



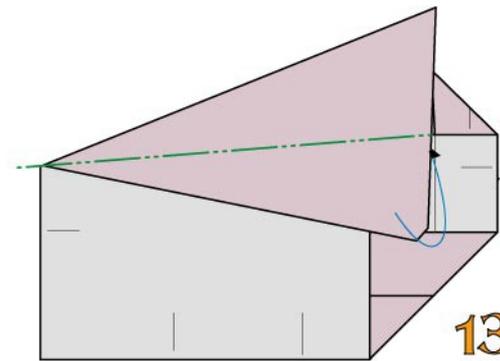
1 piega a valle, 2 a monte e ruotate



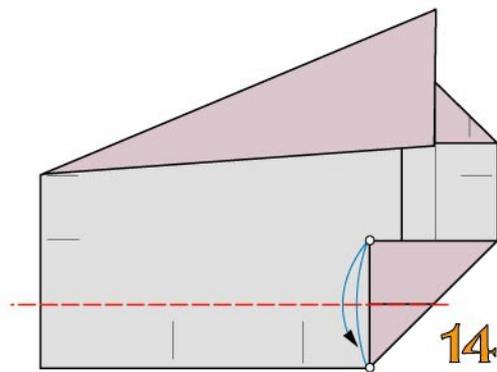
1 piega bisettrice a valle e ruotate



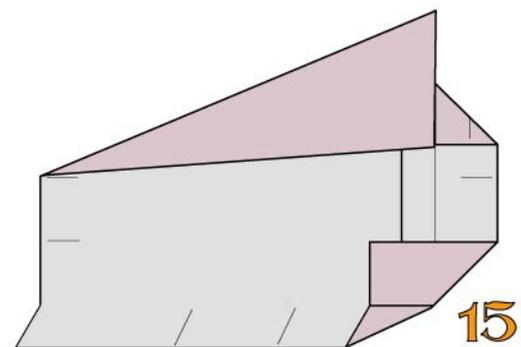
1 piega a valle e ruotate



1 piega a monte e intascate bloccando



1 piega a valle



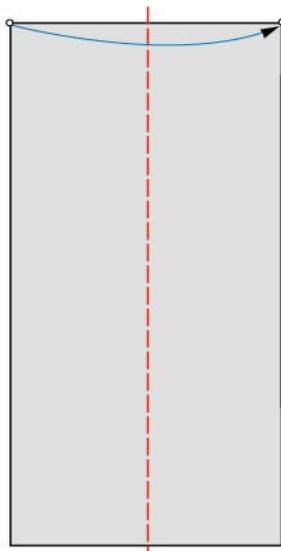
Timpano destro ultimato

ROOF

In origami building, a roof involves overcoming a technical problem that has to do with the coupling of independent components. In this case, I have studied a roof made up of elements of two different widths. Later on, I will study a way to make more complex roofs with roof valleys and ridges.

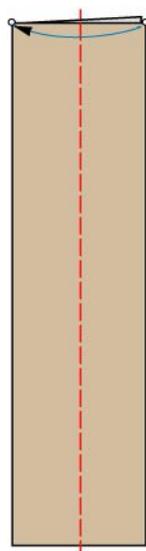
The base module consists of 3 elements: 2 sides made with a half of an ordinary sheet and 1 at the centre which is an unfolded square sheet.

Modulo 8/8



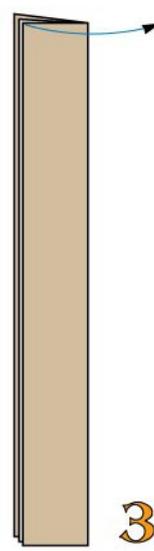
Una piega a valle e ruotate

1



Una piega a valle e ruotate

2



Riaprite il bordo superiore

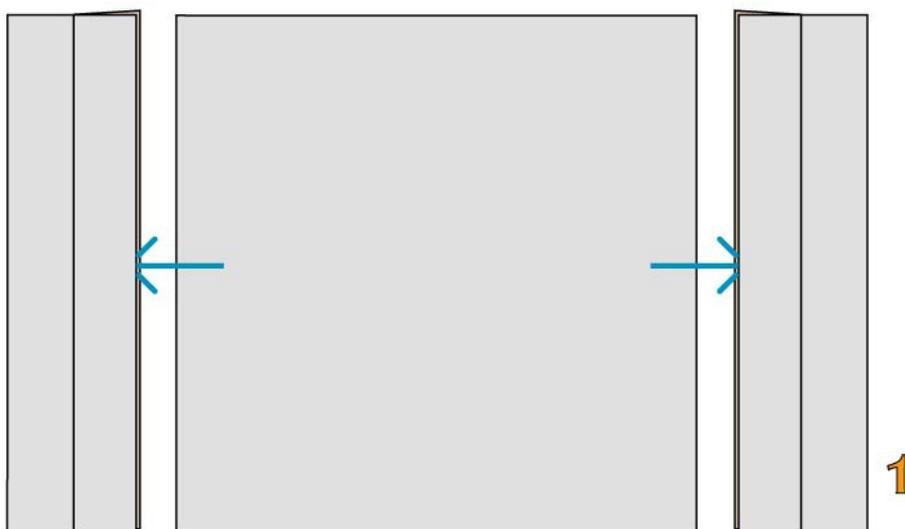
3



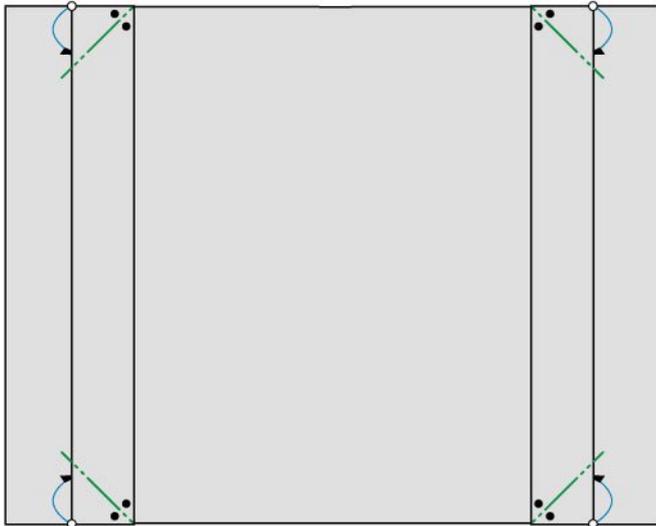
Elemento laterale ultimato

4

UNIONE DEI 3 ELEMENTI

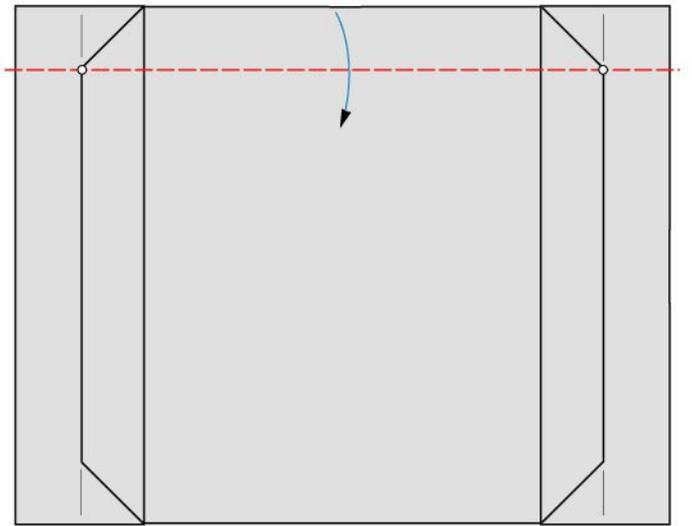


Inserite i bordi verticali del foglio centrale nelle tasche degli elementi laterali



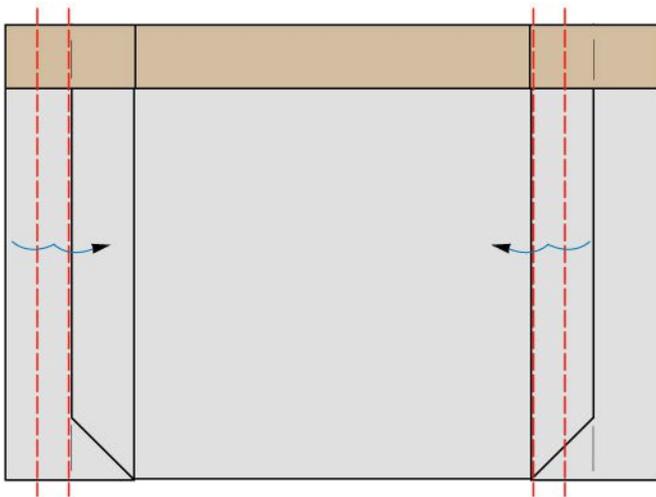
4 pieghe bisettrici a monte e ruotate per bloccare l'unione

2



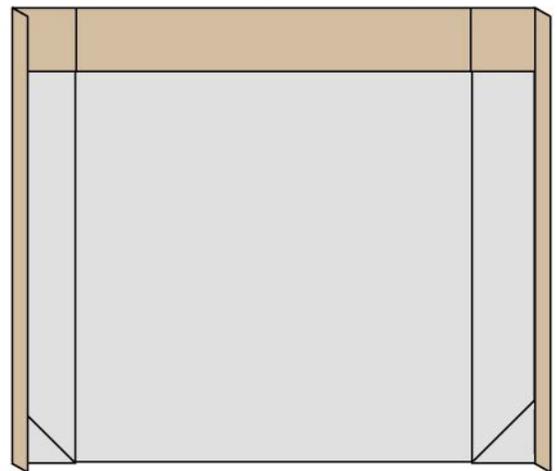
1 piega a valle e ruotate. Questa piega è necessaria per irrigidire trasversalmente il modulo

3



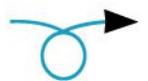
4 pieghe a valle e ruotate 3D i bordi verticali

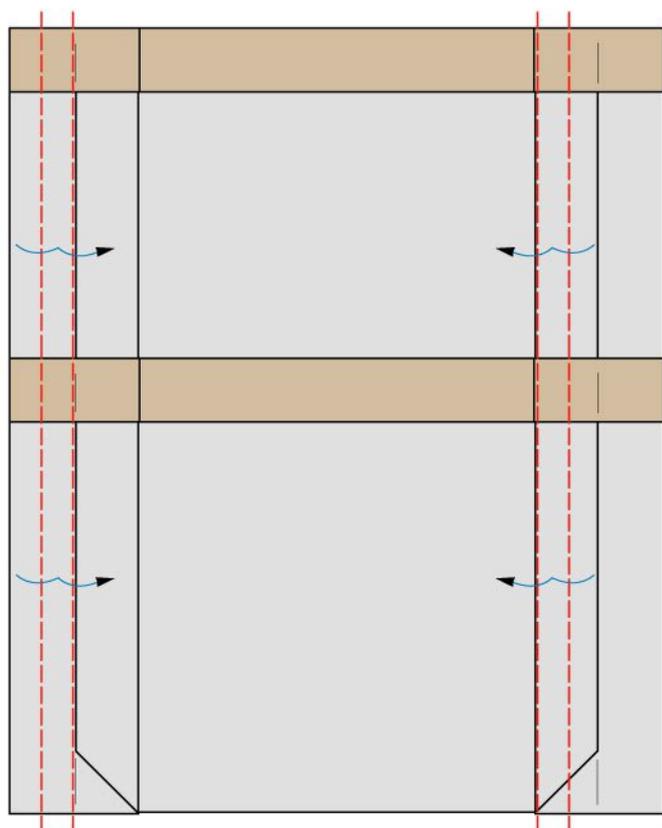
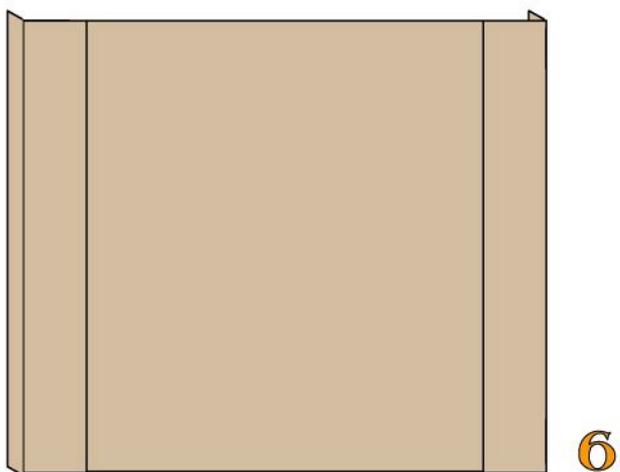
4



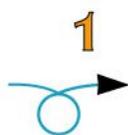
MODULO LARGO 8/8 ULTIMATO

5





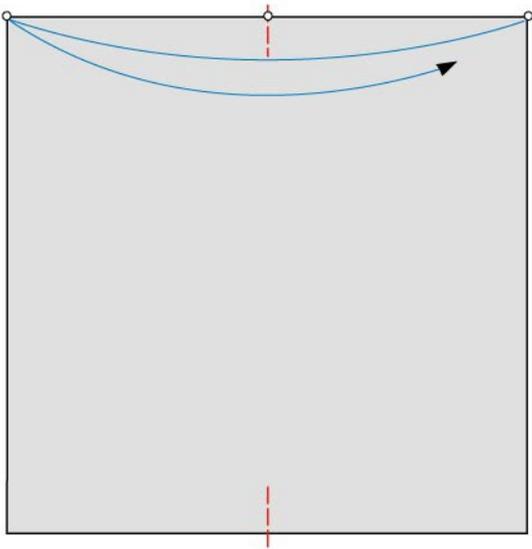
Per unire 2 moduli, sovrapponeteli prima dell'ultimo passaggio. Ribaltate



UNIONE DI 2 MODULI ULTIMATA

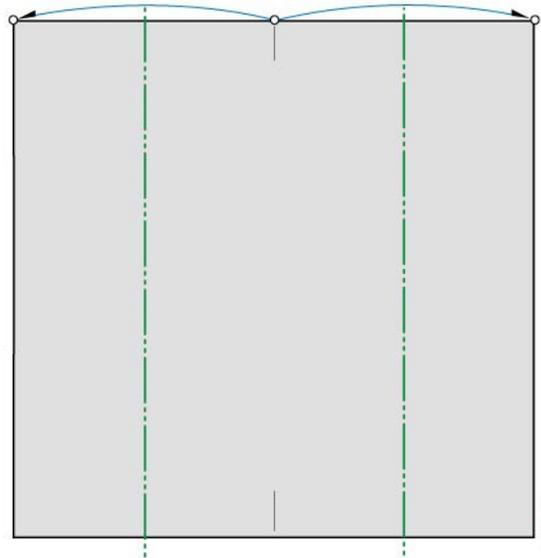
MODULE 10/8

This module is composed of three parts made with square sheets: two on the sides and one at the centre.



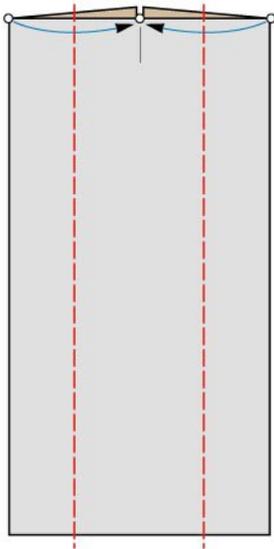
1

Il modulo laterale: 2 pieghe a valle



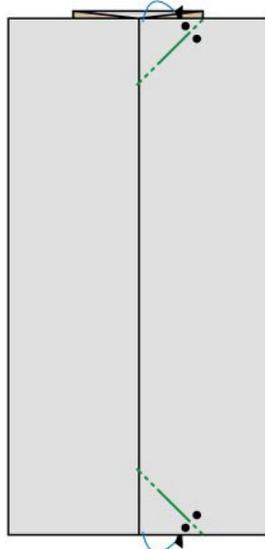
2

2 pieghe a monte e ruotate



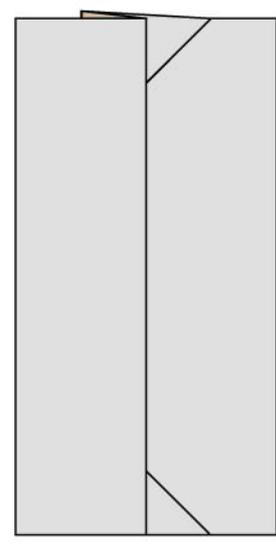
3

2 pieghe a valle solo sulla sup. in vista e ruotate



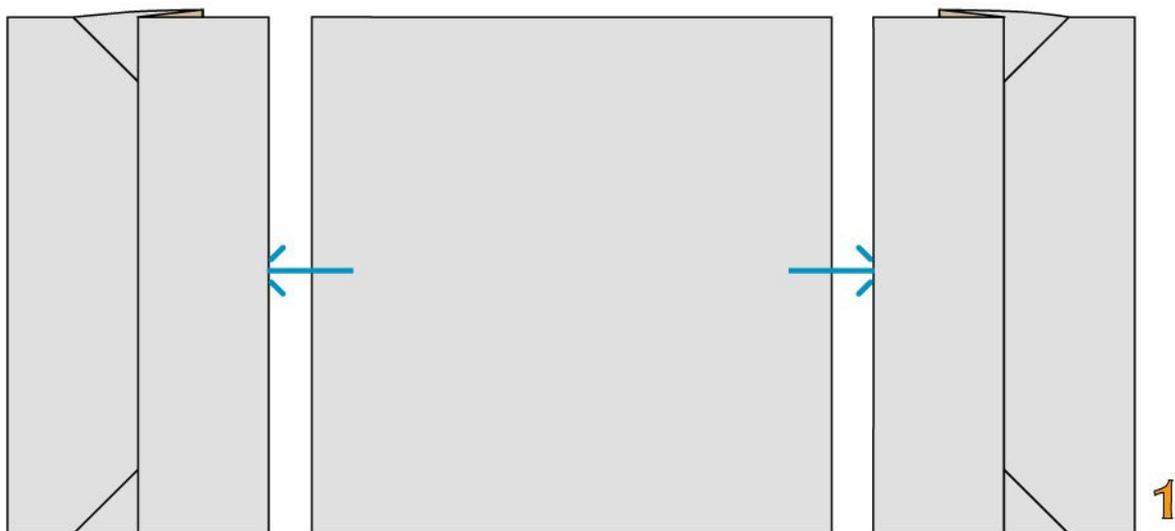
4

2 pieghe bisettrici a monte e ruotate

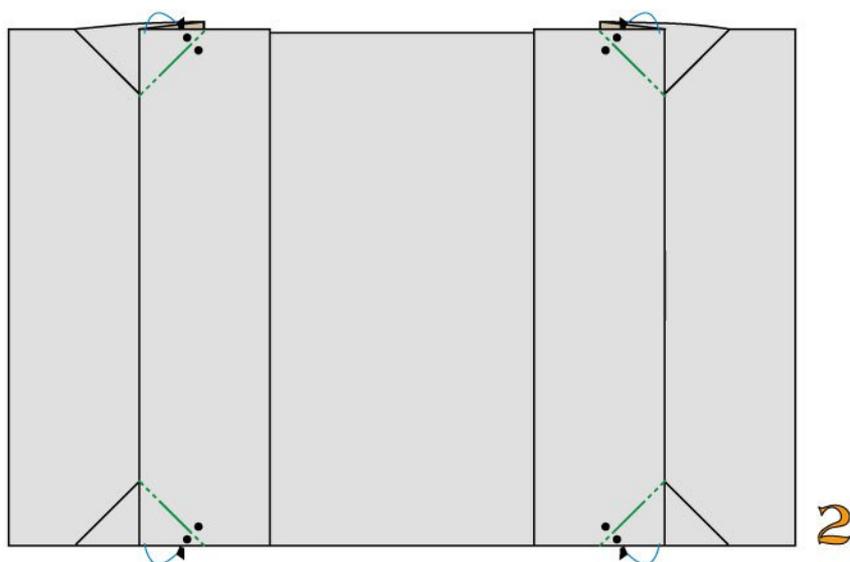


5

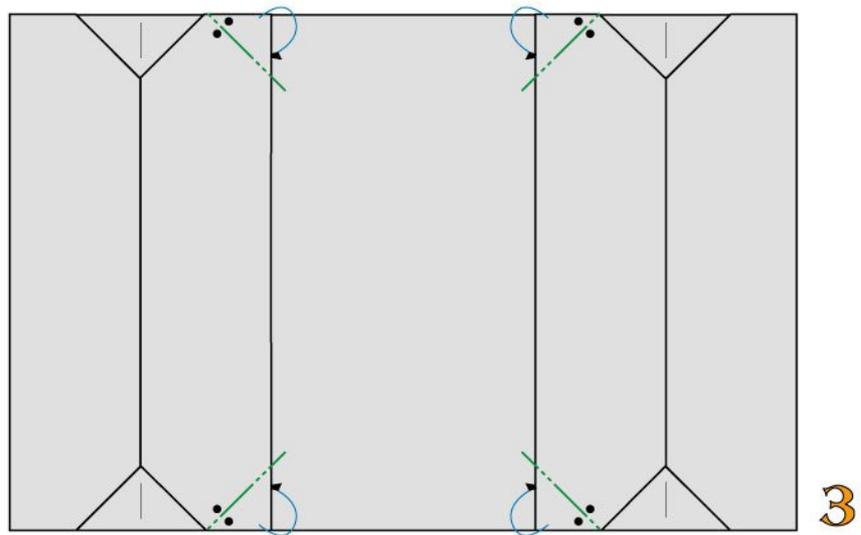
Elemento laterale ultimato



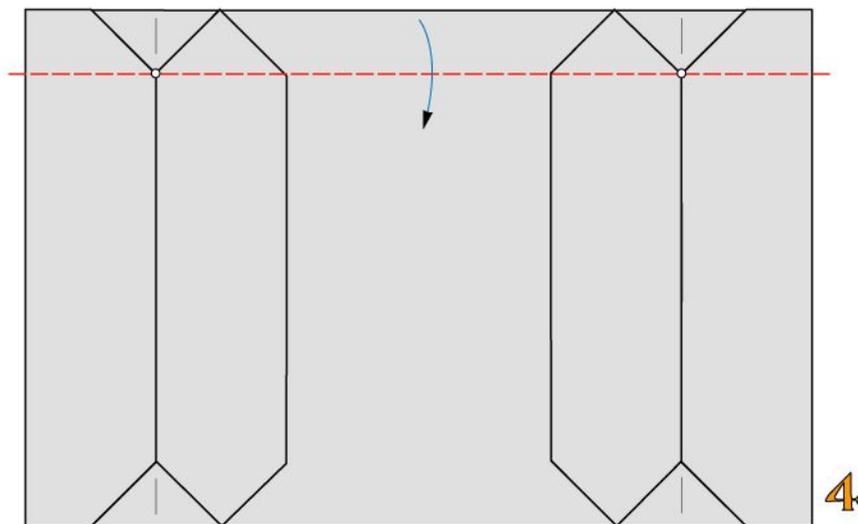
Inserite i bordi verticali del foglio centrale nelle tasche degli elementi laterali



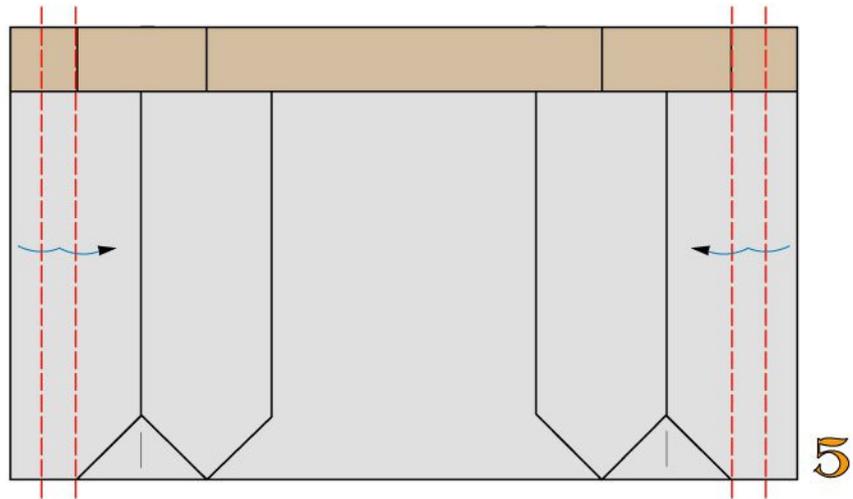
4 pieghe bisettrici a monte e ruotate per bloccare l'unione



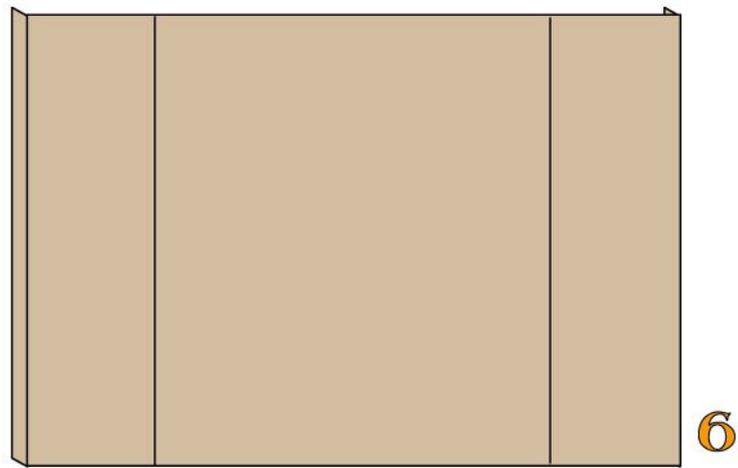
4 pieghe bisettrici a monte e ruotate



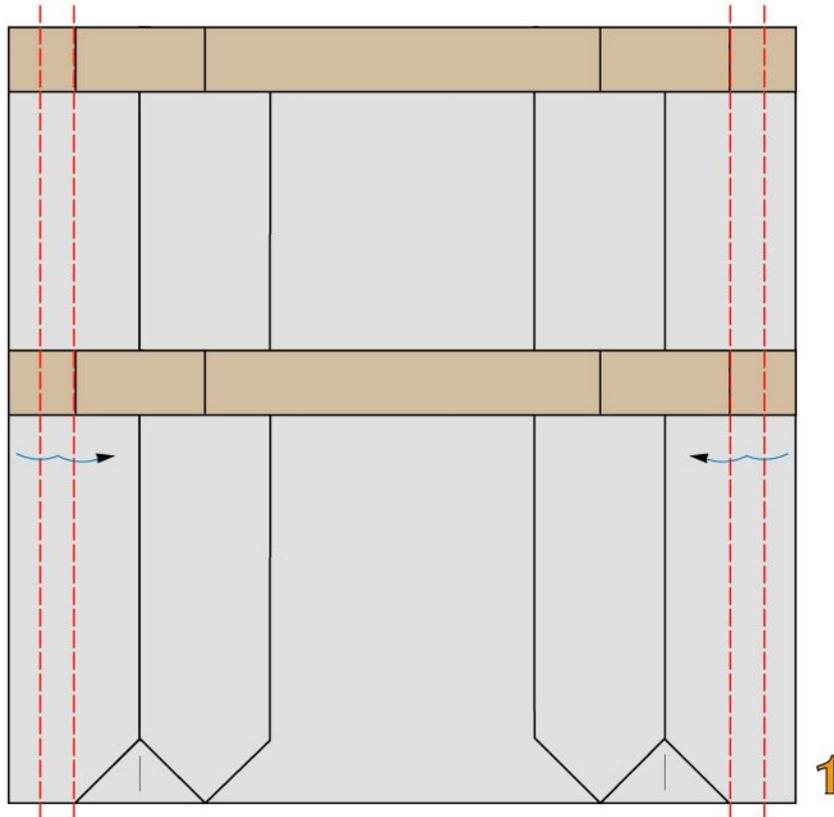
1 piega a valle e ruotate.
 Questa piega è necessaria per irrigidire trasversalmente il modulo



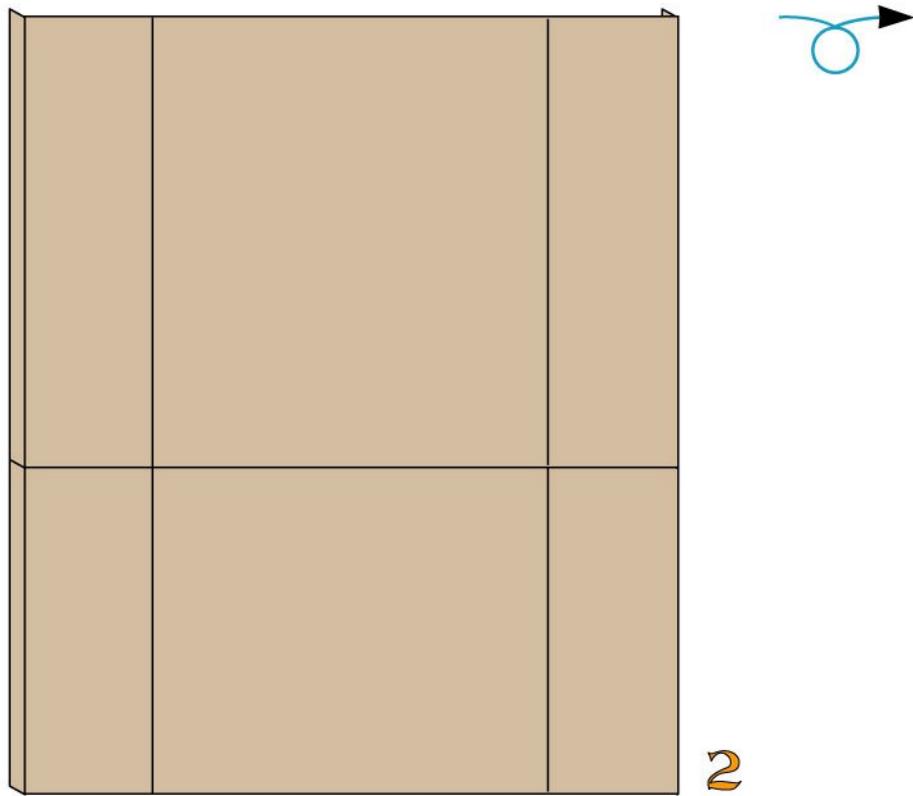
4 pieghe a valle e ruotate 3D i bordi verticali



MODULO LARGO 10/8 ULTIMATO



Per unire 2 moduli, sovrapponeteli prima dell'ultimo passaggio. Ribaltate

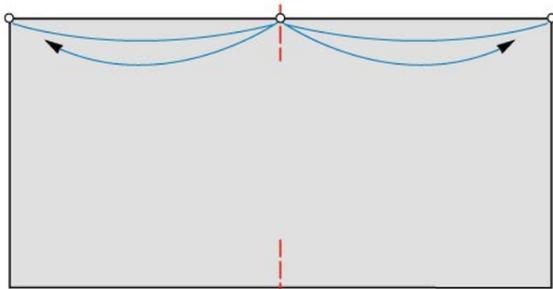


UNIONE DI 2 MODULI ULTIMATA

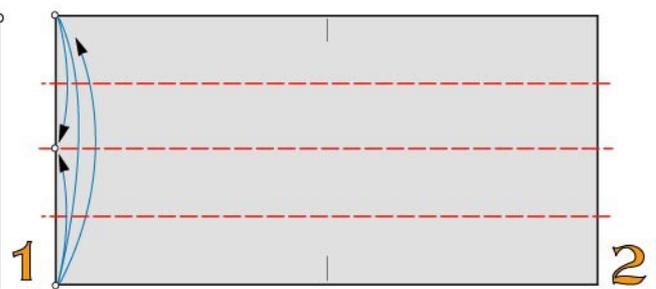
SLANTING ROOF

This element is required to cover the pilasters having a rectangular section, at the roof of the building. They are of two kinds: high and low ones.

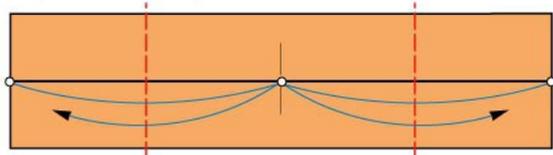
CAPPUCCIO INCLINATO ALTO



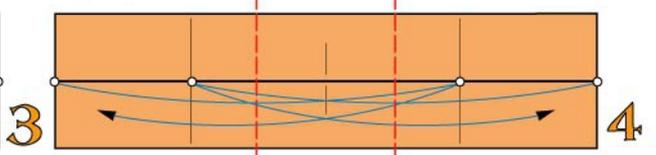
2 piccole pieghe a valle



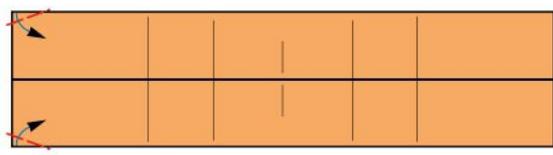
3 pieghe a valle e ruotate



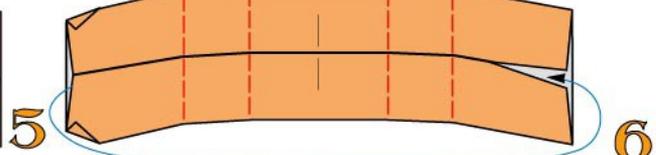
2 pieghe a valle



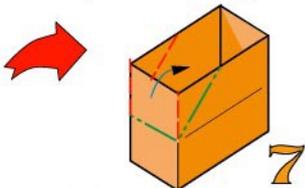
2 pieghe a valle



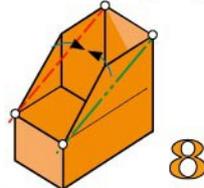
2 piccole pieghe a valle e ruotate



Ripiegando a valle intascate 3D



3 pieghe a monte e ruotate

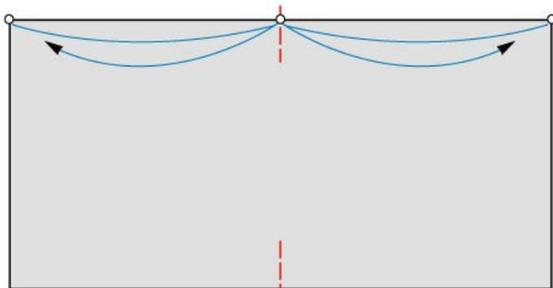


2 pieghe a monte e ruotate

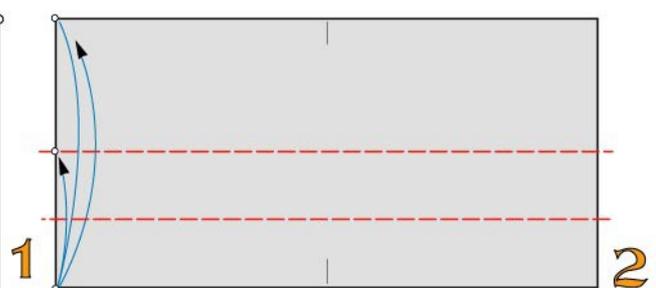


Cappuccio inclinato alto ultimato

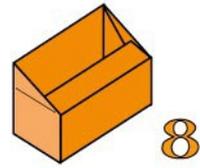
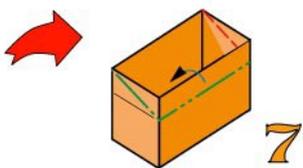
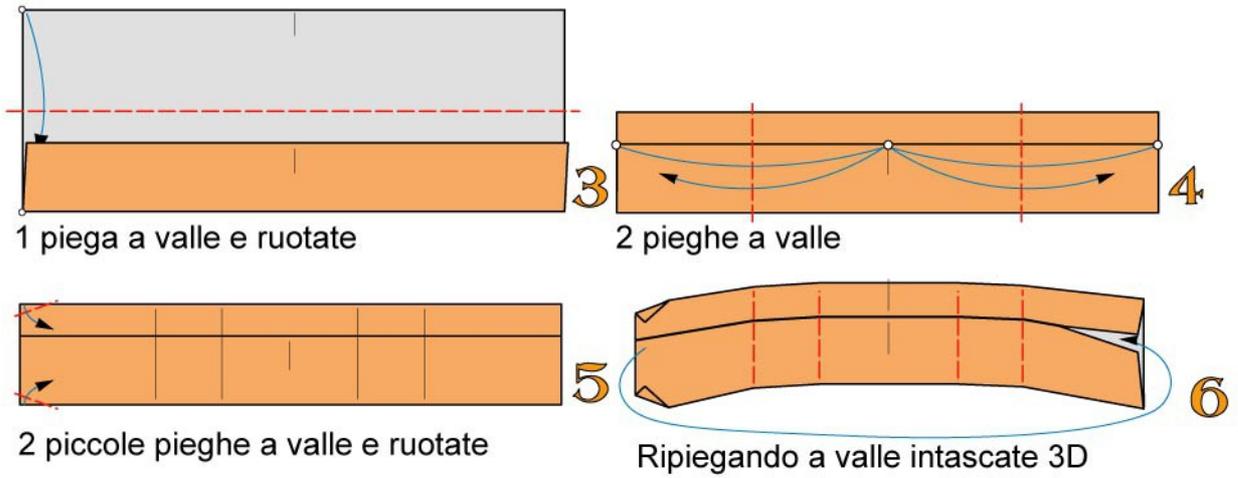
CAPPUCCIO INCLINATO BASSO



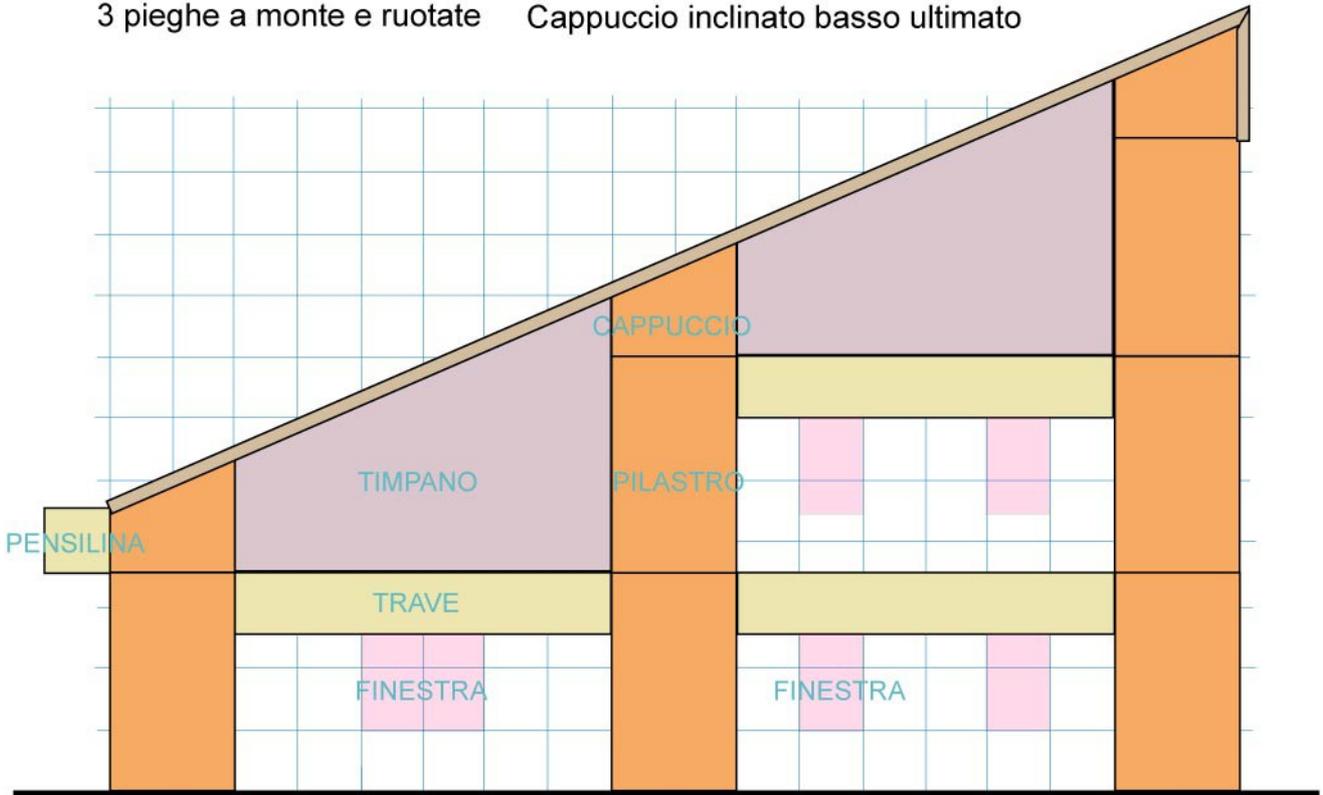
2 piccole pieghe a valle



2 pieghe a valle e ruotate

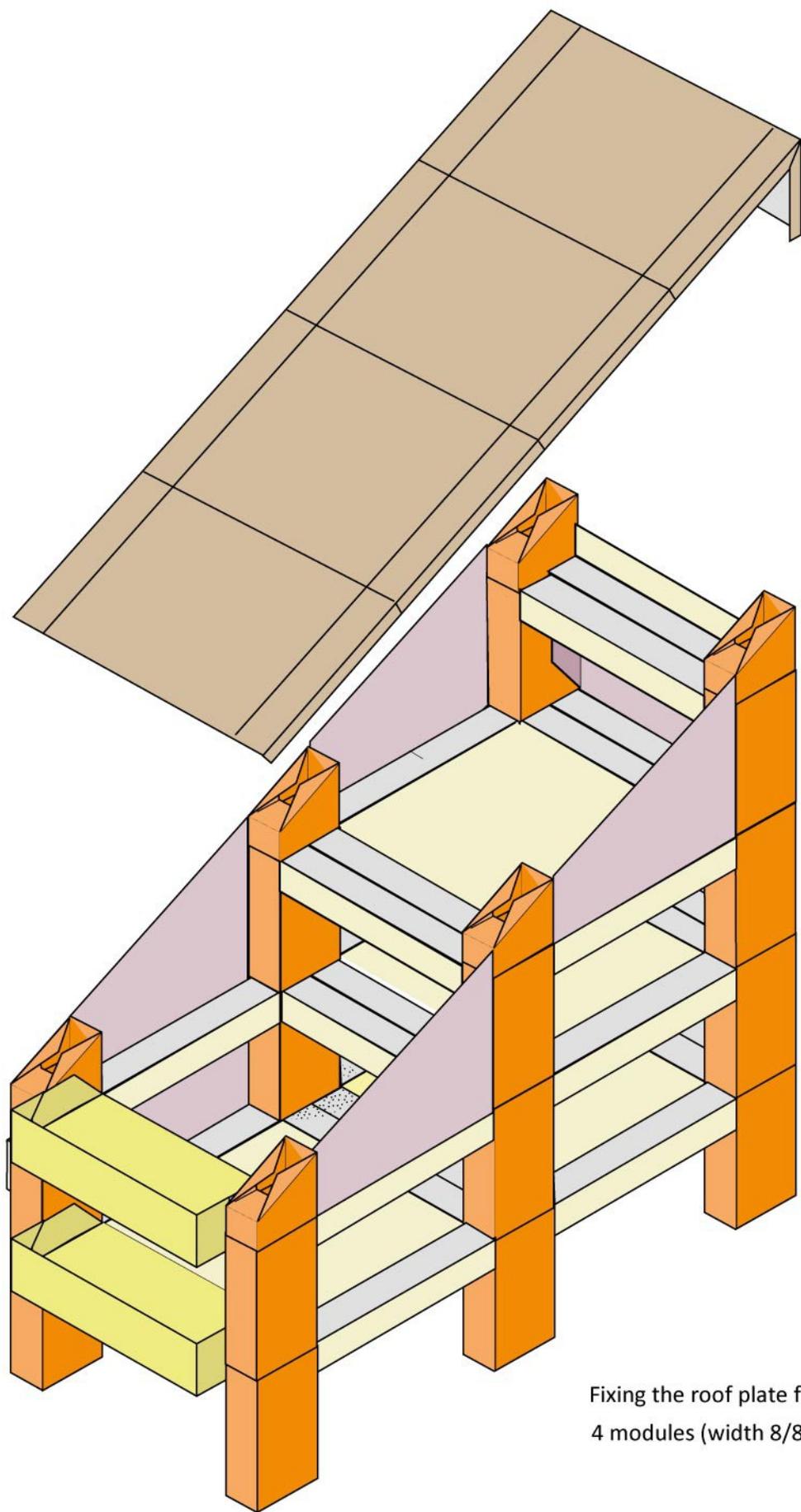


3 pieghe a monte e ruotate Cappuccio inclinato basso ultimato

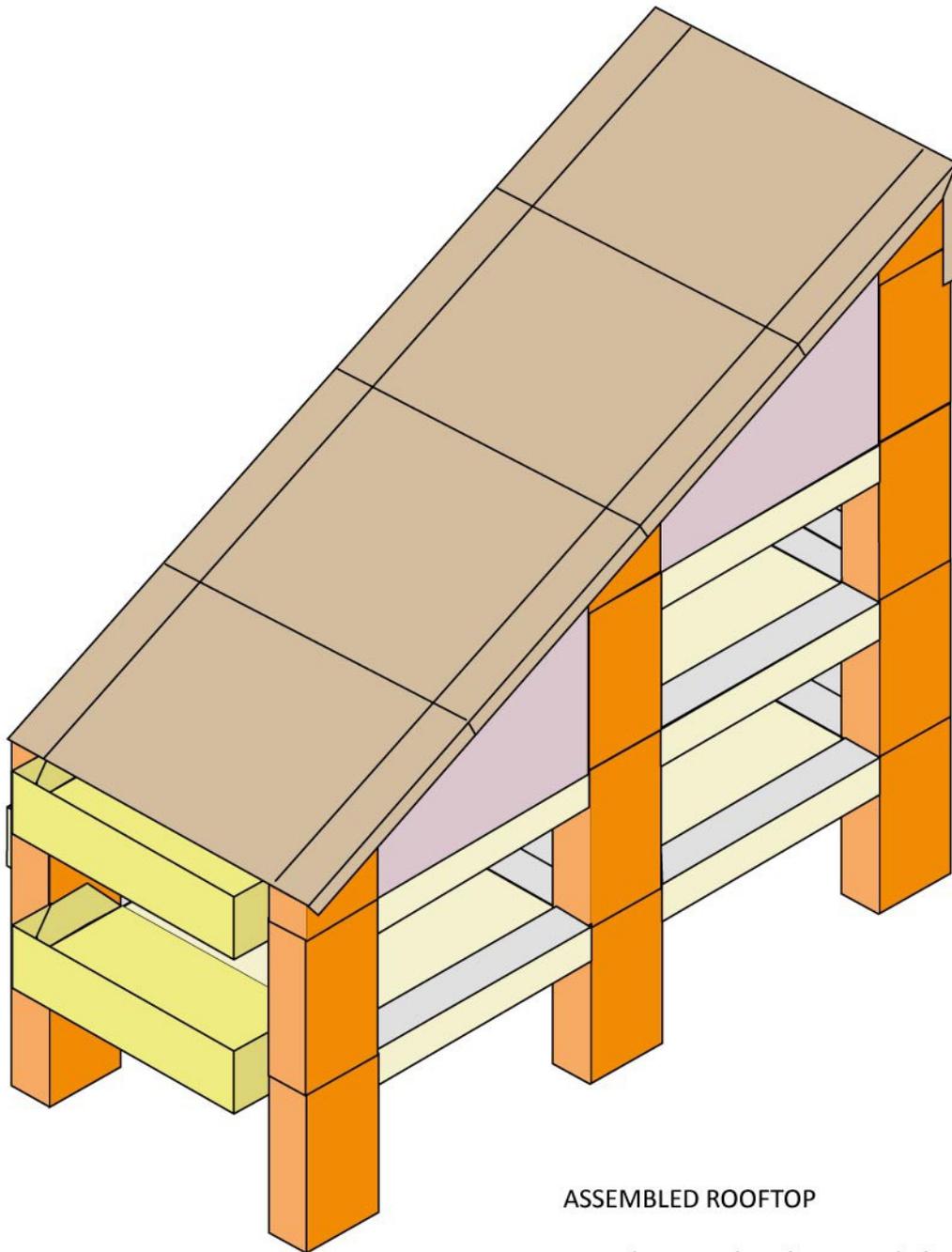


STEEP SLANTING ROOF

Cross section where the length of each square represents 1/8 of the base sheet. The width of the roof is 8/8. There is one wall with a large window and two walls with two narrow windows.

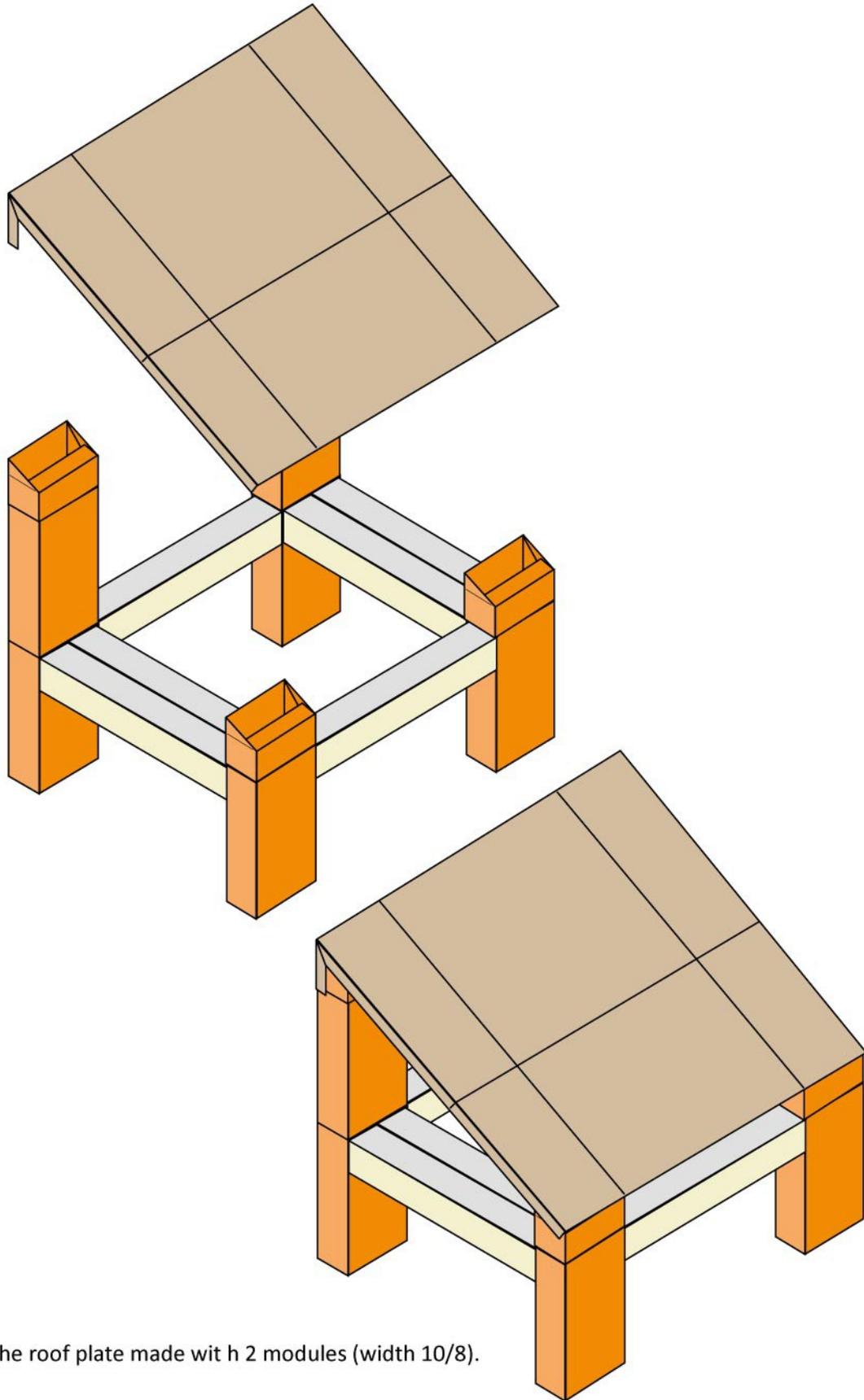


Fixing the roof plate formed by
4 modules (width 8/8)



ASSEMBLED ROOFTOP

It can be seen that the upper balcony is not accessible and has a purely aesthetic function



Fixing the roof plate made with 2 modules (width 10/8).

STAIRWELL

The vertical connection between floors represents the main part of the building, its backbone.

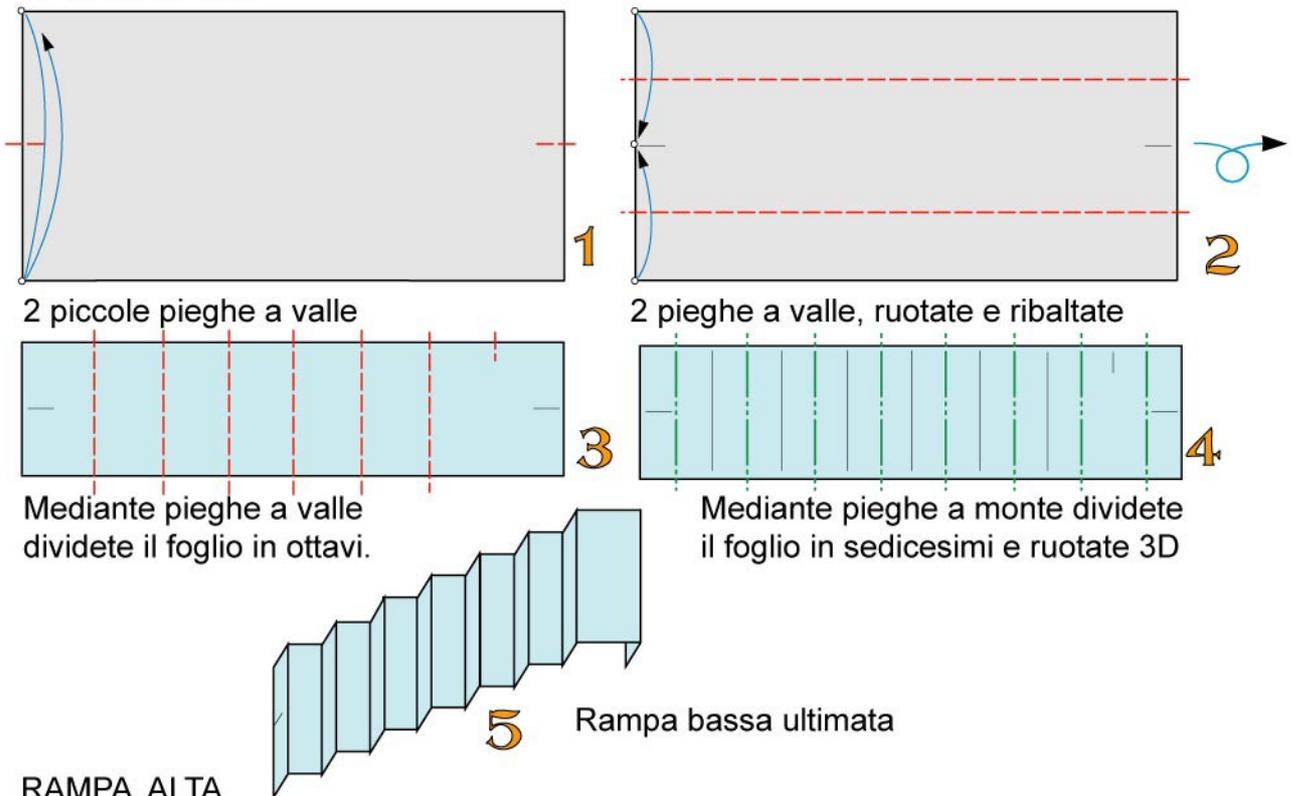
Fixing the flights of stairs can be done in two different ways: either the stairs can be anchored like shelves to the side walls or they can be coupled to the landing beams.

Here we are studying the second solution.

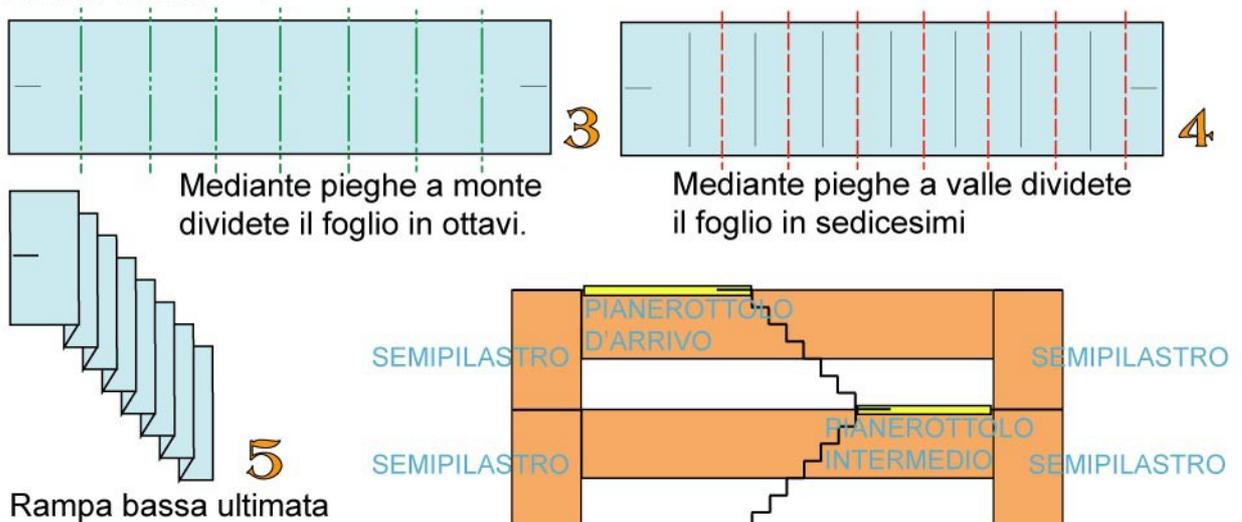
The basic elements required are two different stair flights, two different landings, 8 square section semi-pilasters and 4 reinforced concrete beams.

Cardboard should be used for stairs.

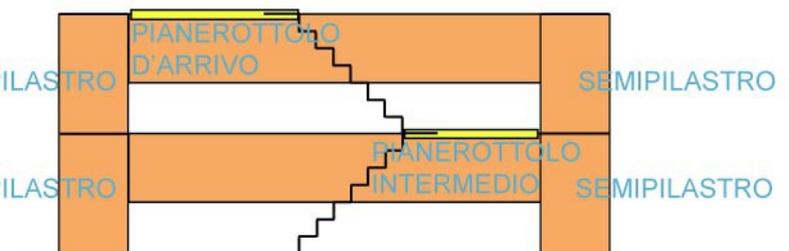
RAMPA BASSA



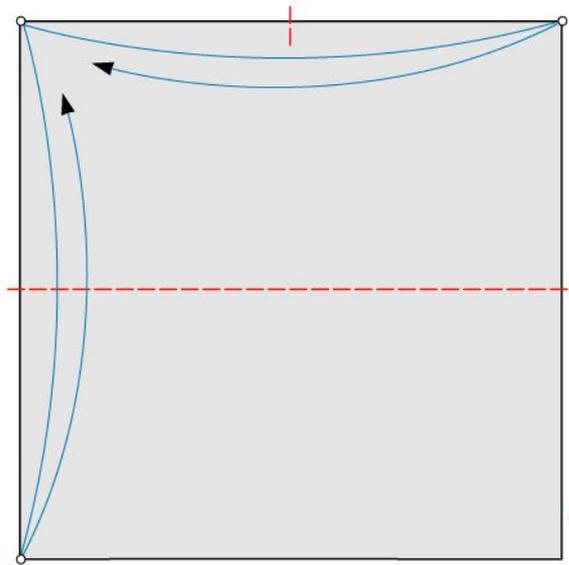
RAMPA ALTA



SEZIONE VERTICALE ILLUSTRANTE GLI ELEMENTI DEL VANO SCALE

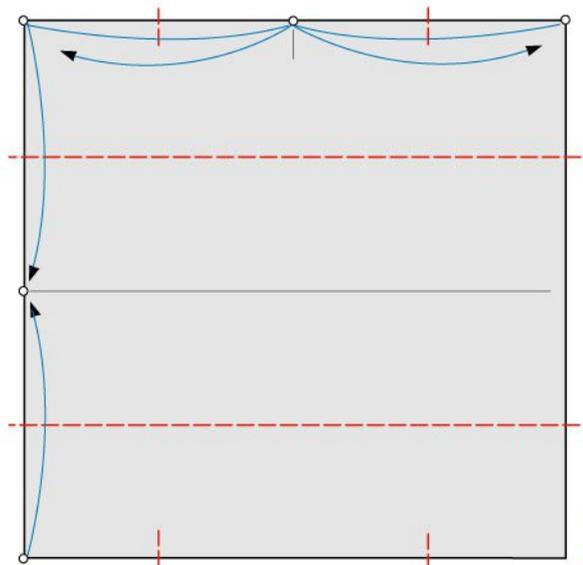


PIANEROTTOLO INTERMEDIO



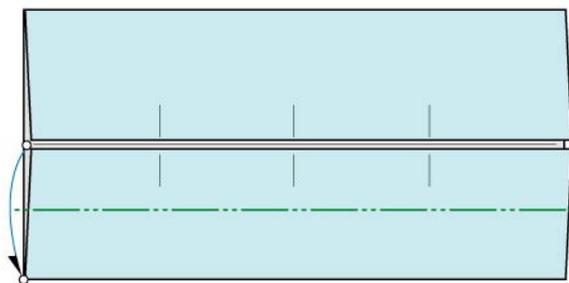
1

2 pieghe a valle, 1 piccola ed 1 grande



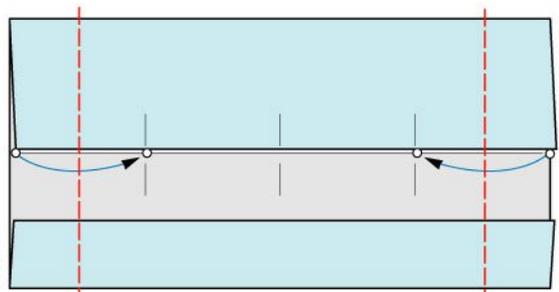
2

6 pieghe a valle, 4 piccole



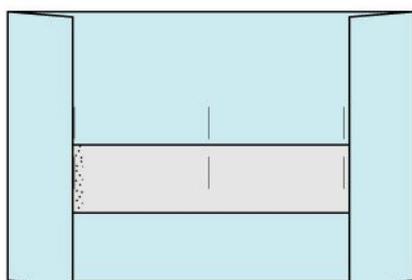
3

1 piega a monte, solo sulla sup. in vista e ruotate



4

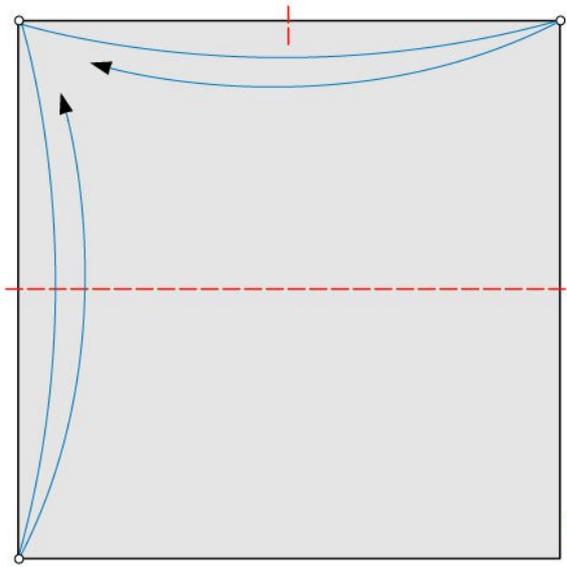
2 pieghe a valle e ruotate



5

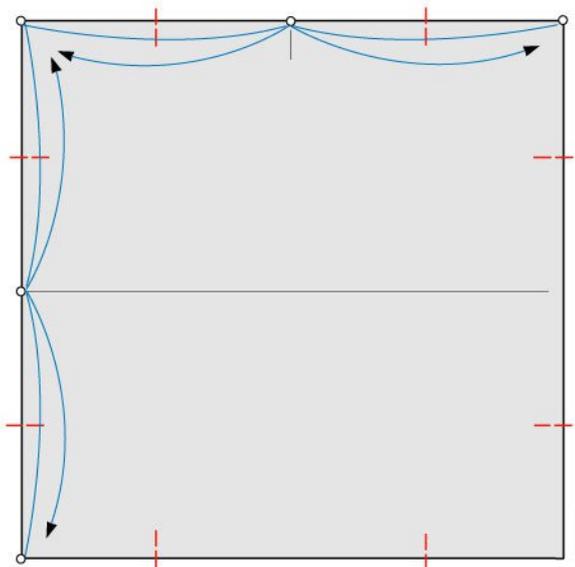
Pianerottolo intermedio ultimato

PIANEROTTOLO D' ARRIVO



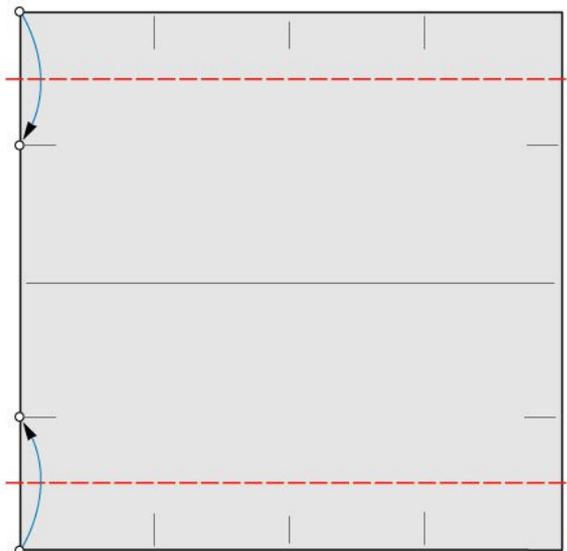
1

2 pieghe a valle, 1 piccola ed 1 grande



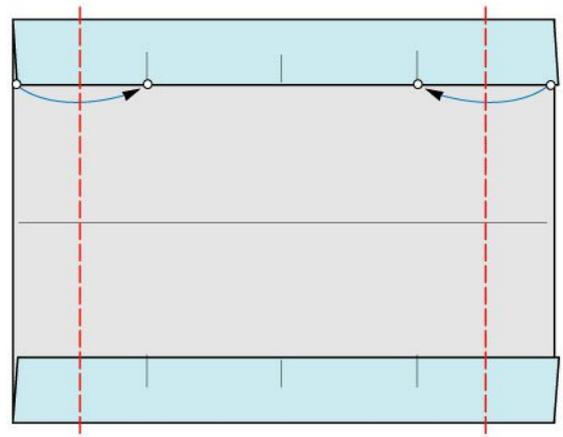
2

8 piccole pieghe a valle



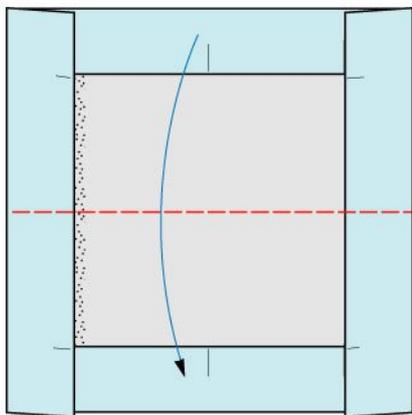
3

2 pieghe a valle e ruotate



4

2 pieghe a valle e ruotate



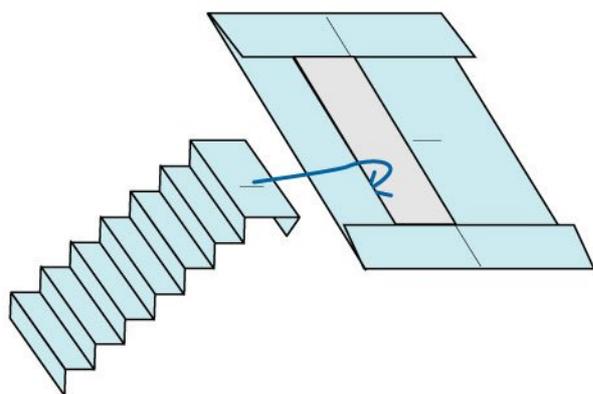
5

1 piega a valle e ruotate

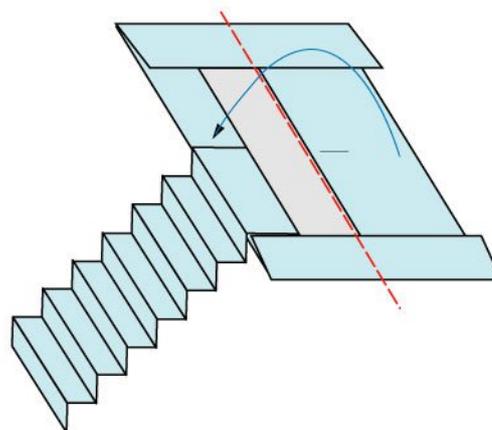


Pianerottolo d'arrivo ultimato

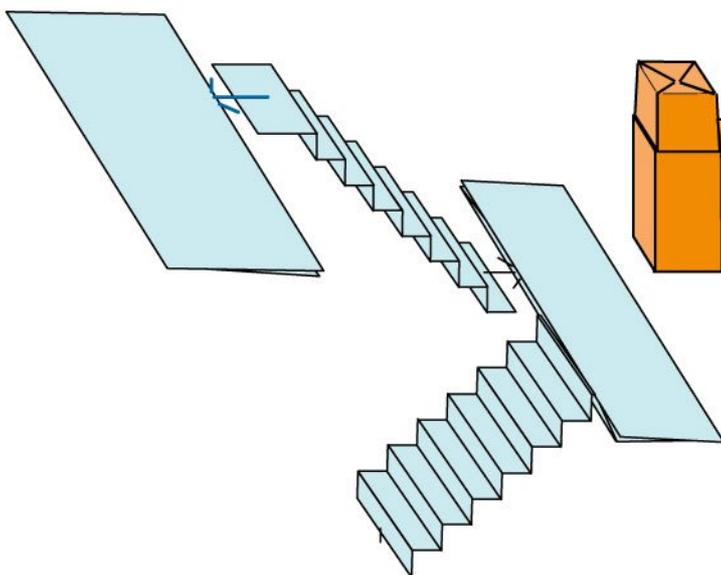
MONTAGGIO DEGLI ELEMENTI DEL VANO SCALA



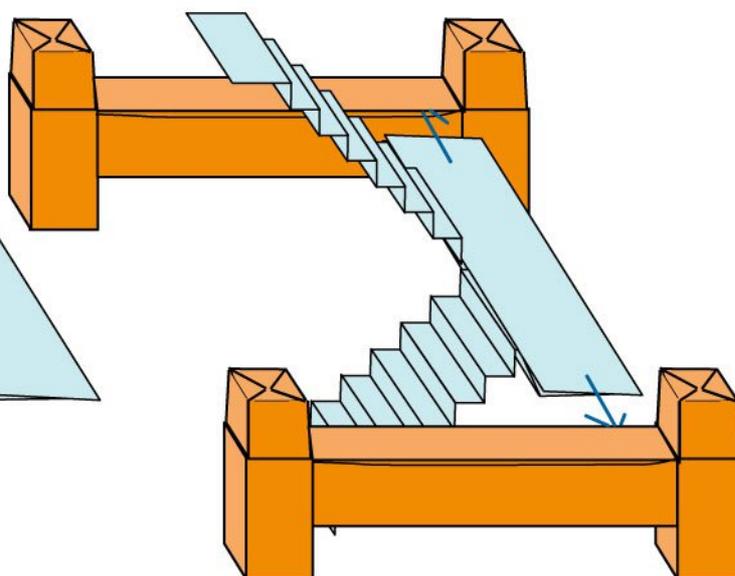
Collegate la rampa bassa con il pianerottolo intermedio



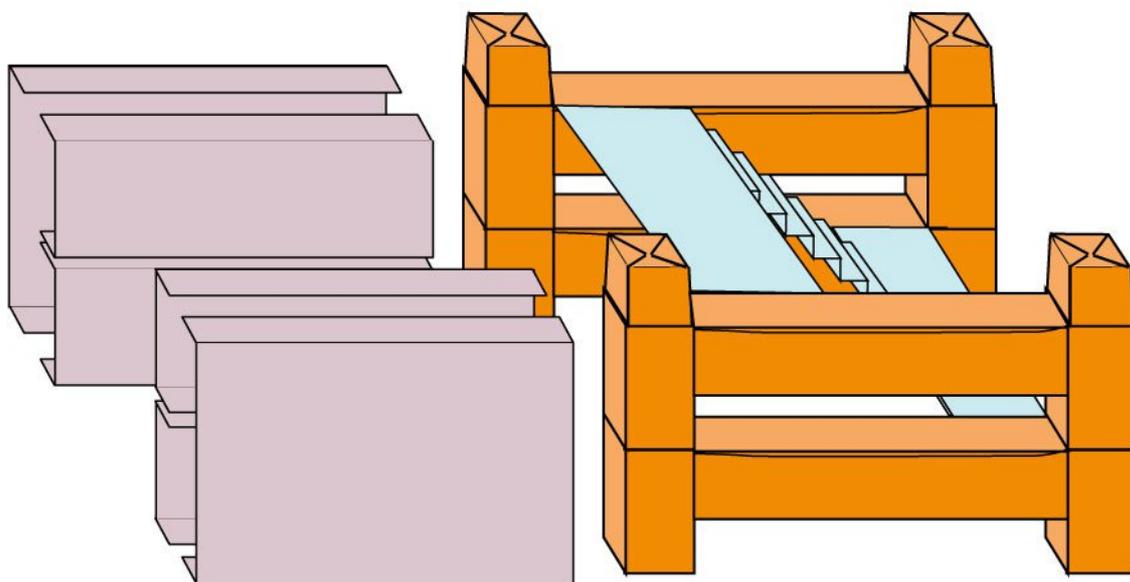
Mediante piega a valle chiudete il pianerottolo intermedio



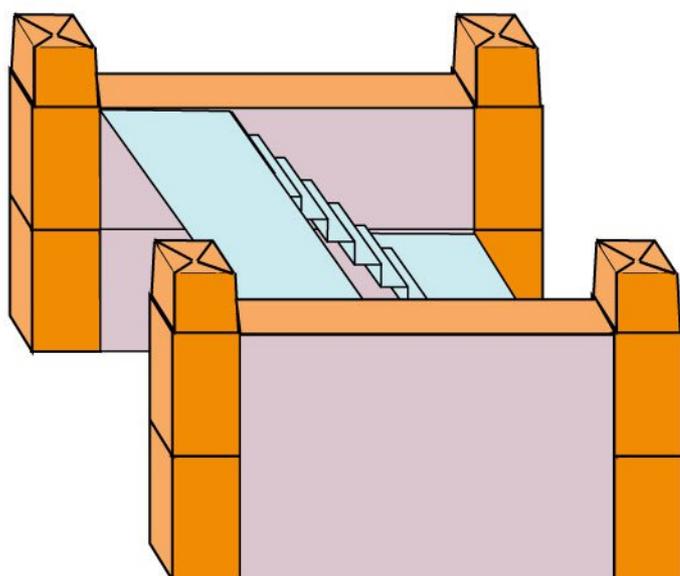
Inserite la rampa alta nei 2 pianerottoli



Collegate 2 travi a 4 semipilastri a sezione quadrata. Intascate il pianerottolo intermedio nelle travi.



Aggiungete altri 4 semipilastri e 2 travi. Inscatolate le travi con 2 pareti e 4 semipareti. Intascate il pianerottolo superiore nelle travi

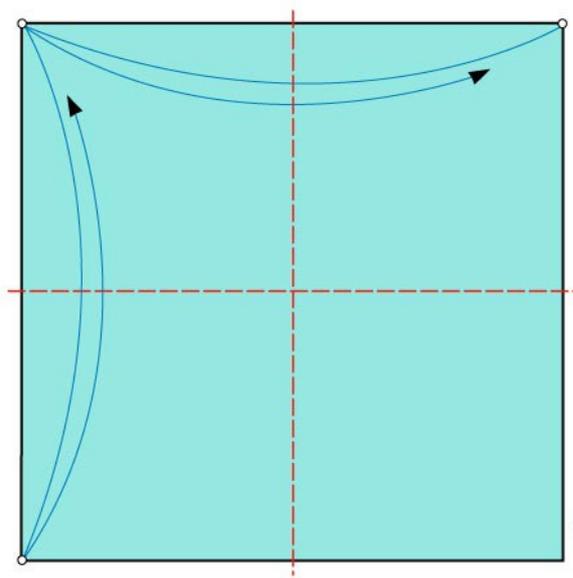


VANO SCALA ULTIMATO

CYPRESS

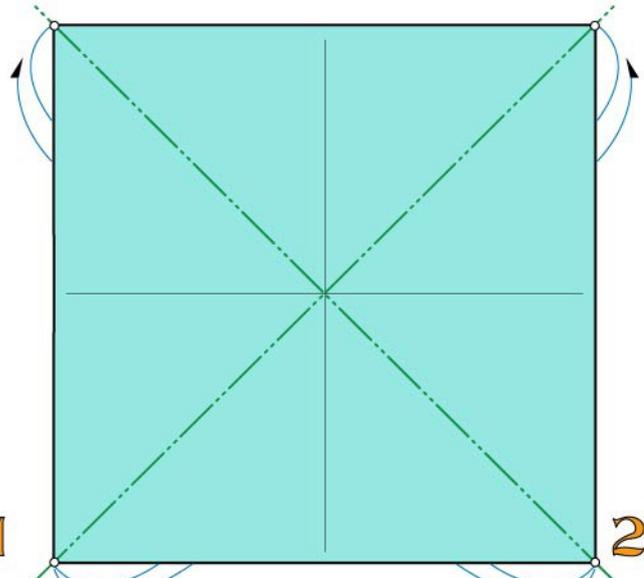
The posing of trees is important to improve the atmosphere surrounding the buildings.

Here I illustrate the making of a cypress. (page 205)



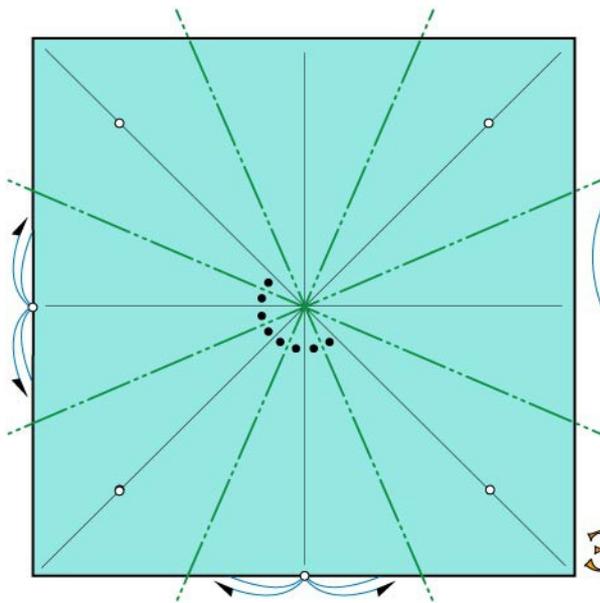
2 pieghe a valle

1



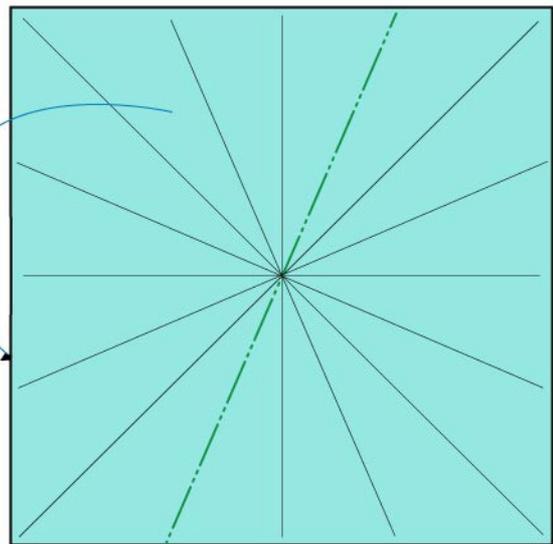
2 pieghe a monte

2



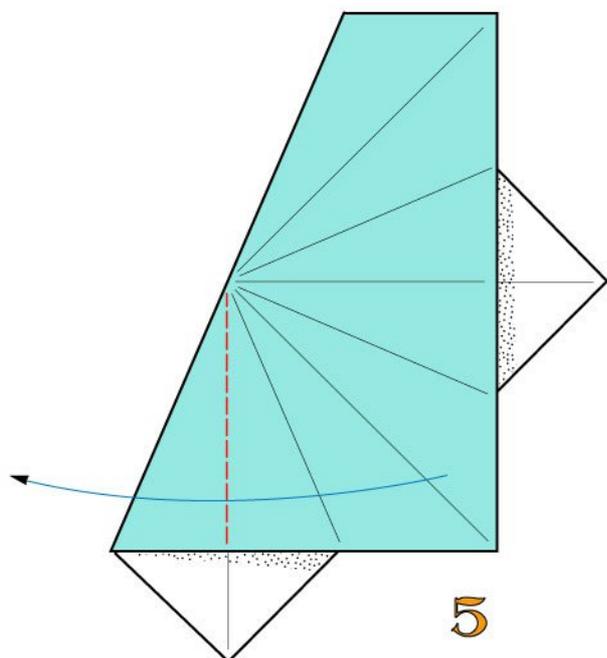
4 pieghe bisettrici a monte

3



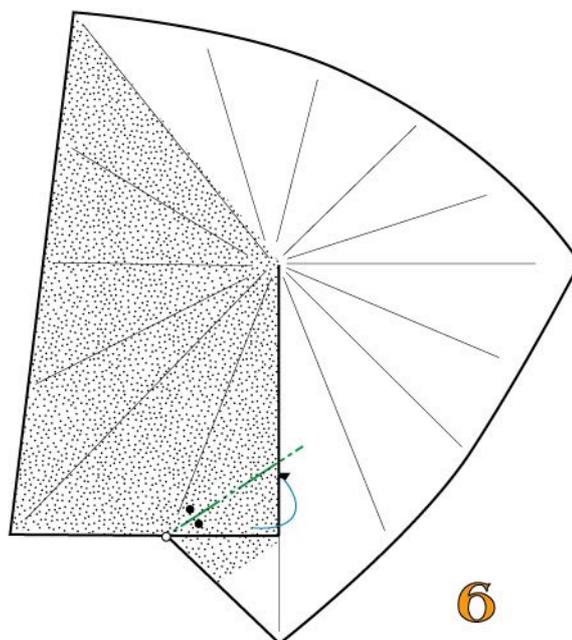
Ruotate ripiegando a monte

4



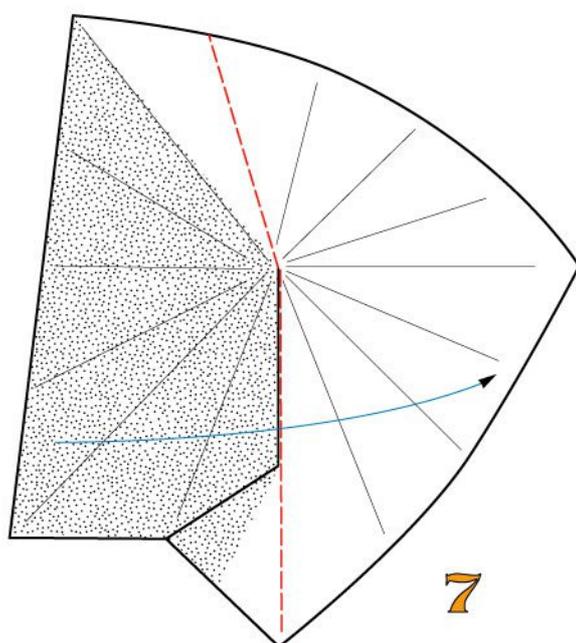
5

Ruotate 3D ripiegando a valle



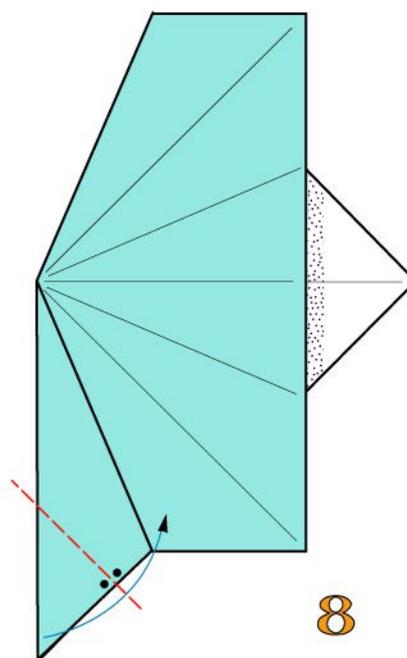
6

Una piega a monte e ruotate bloccando in posizione



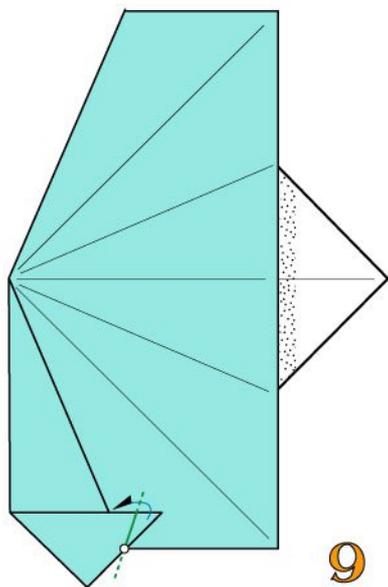
7

Ruotate 2D ripiegando a valle



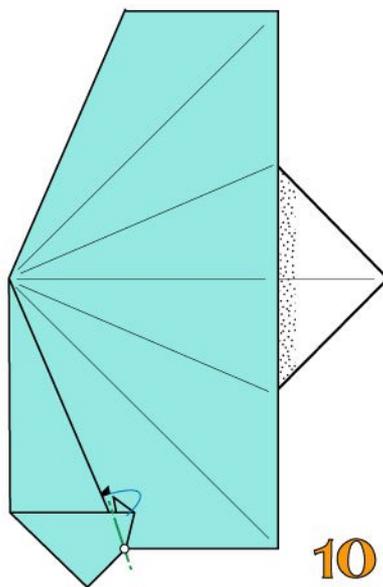
8

Una piega a valle e ruotate



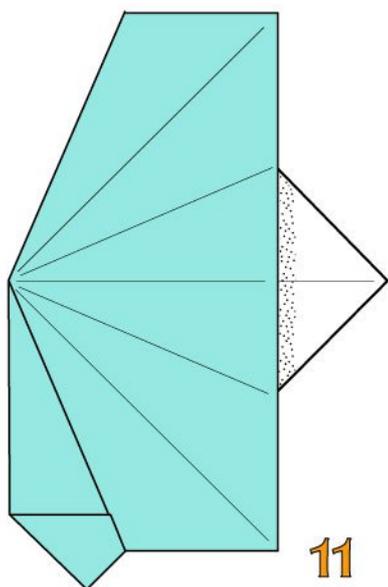
9

Una piega a monte e ruotate



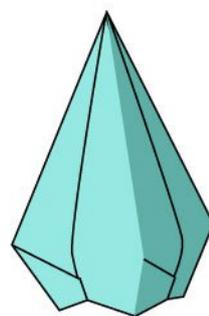
10

Una piega a monte e ruotate
intascando e bloccando



11

Anche per gli altri 3 vertici ripetete
le operazioni delle fig. da 4 a 10

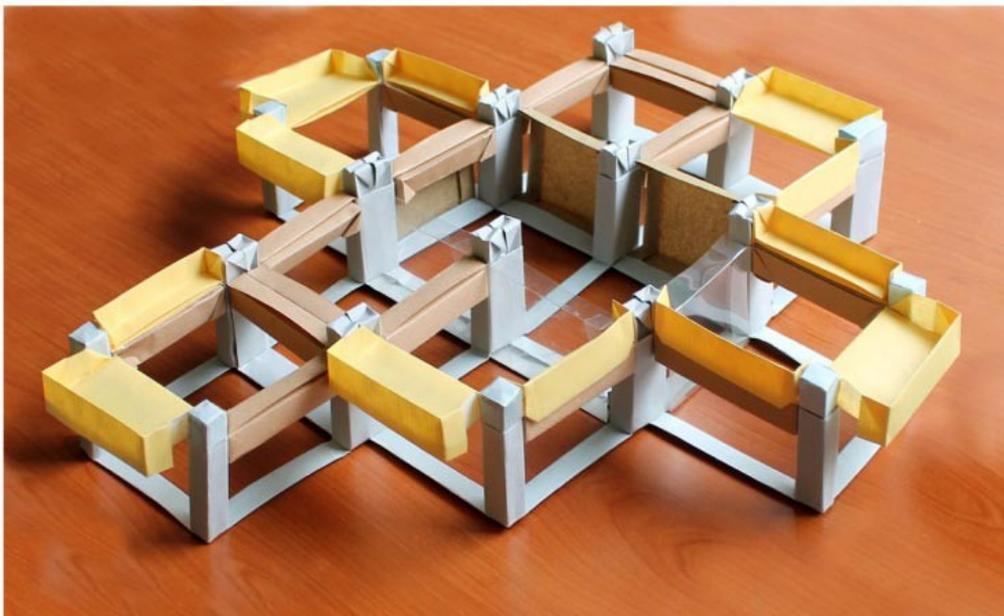


12

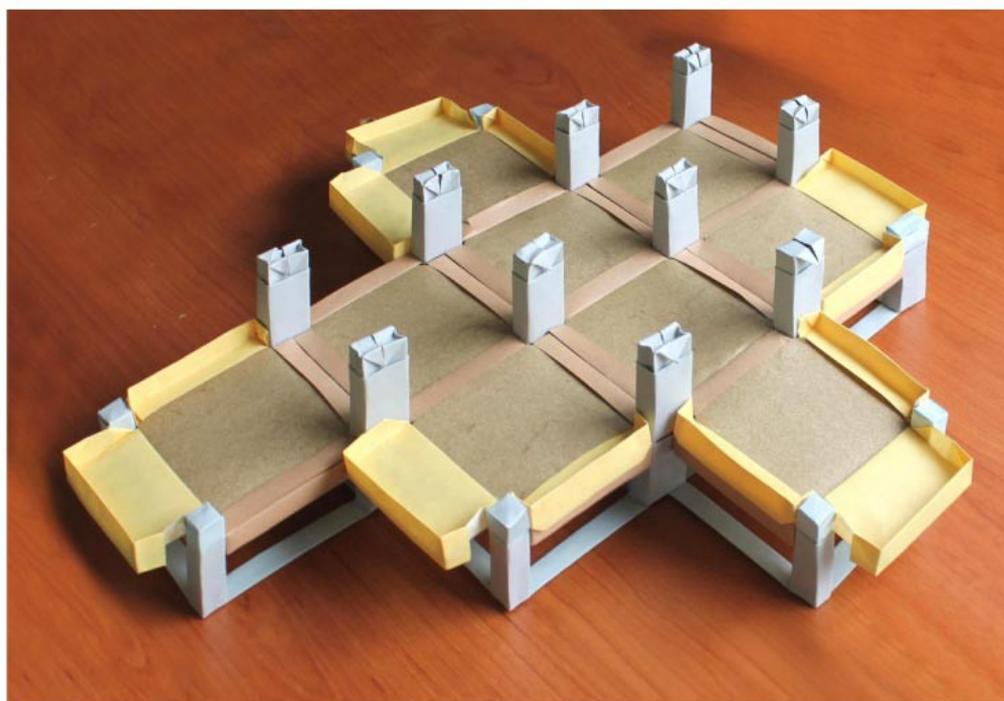
Cipresso ultimato

BUILDING A VILLA

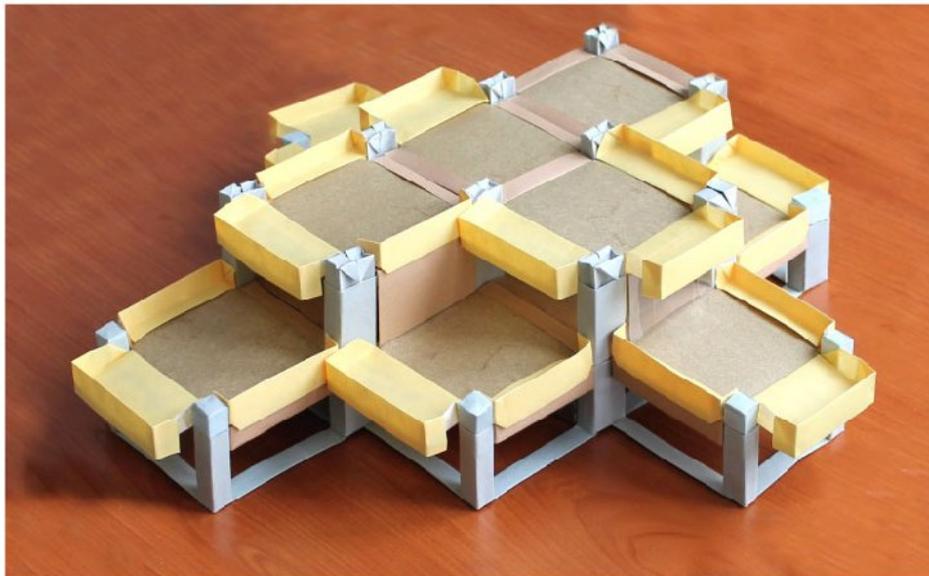
Different moments of the construction



Fondazioni, pareti pianoterra, travi e poggioni piani primo



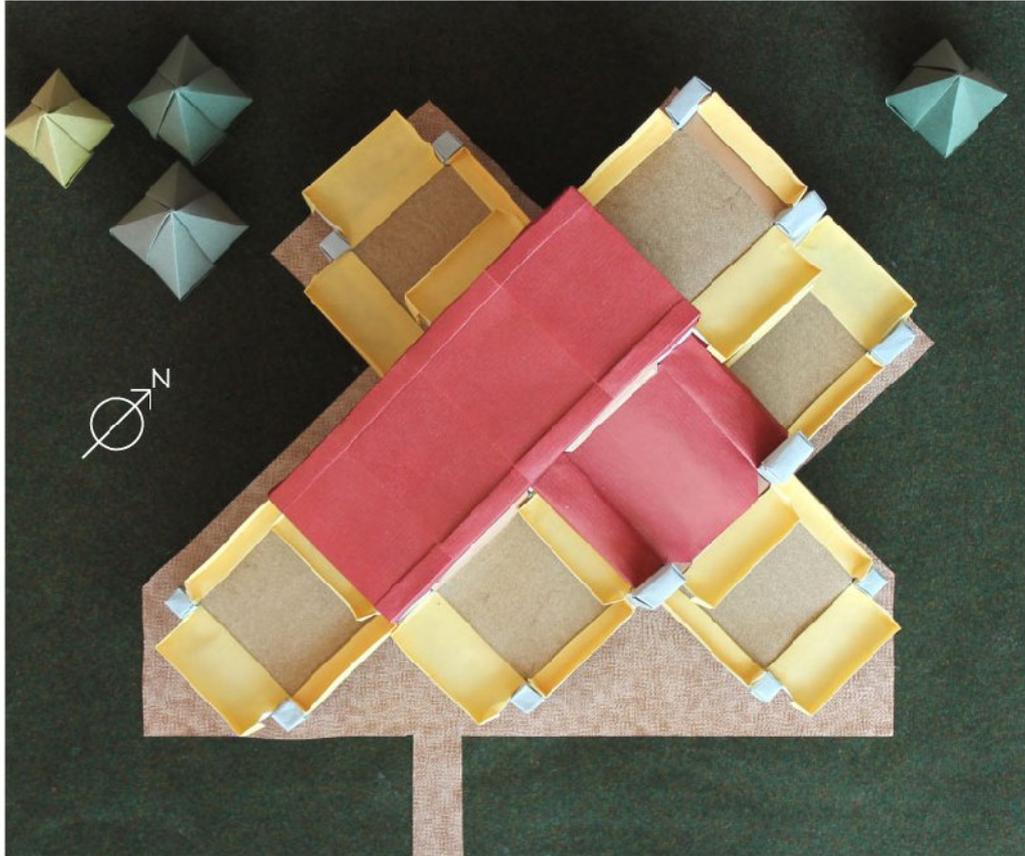
Solaio e pilastri piano primo



Pareti piano primo, solaio e poggioni piano secondo



Villa ultimata



Pianta



Prospetto Sud-Est



Prospetto Est



Prospetto Sud



Prospetto Sud-Ovest



Prospetto Nord-Est

PUBBLICAZIONI DI FRANCO PAVARIN

Aerei , jet ed astronavi di carta volanti	IL CASTELLO	1986
Origami animati	“	1987
Origami maschere animate	”	1988
Decorazioni modulari con origami modulati	“	1989
Origami motoscafi navi barche e velieri	”	1990
Origami scatole e contenitori	“	1990
Pieghe forme e colori	”	1994
Aerei e navi di carta	FABBRI	1996
Fold and fly Paper airplanes	STERLING PUBLISHING	1998
Manuale rapido di aerei di carta volanti	FABBRI	2000
Aerei di carta 17 modelli volanti inediti	IL CASTELLO	2001
Aviones voladores	TUTOR S.A.	2003
17 modelos ineditos de aviones voladores	“	2004
Naves voladoras	”	2006
Quaderni Quadrato magico n.20 e 48	CDO	
Maschere, elmi e copricapi	web	2010
Maschere trasformabili	web	2011
21 nuovi aerei origami volanti	web	2014
Maschere origami 3D volume 1	web	2014
Maschere origami 3D volume 2	web	2015
Quaderni Quadrato Magico n. 54 e 56	CDO	
Composizione modulare 1	web	2016
Manuale dell'architetto origamista	web	2016



Prospetto Sud-Est



Prospetto Est

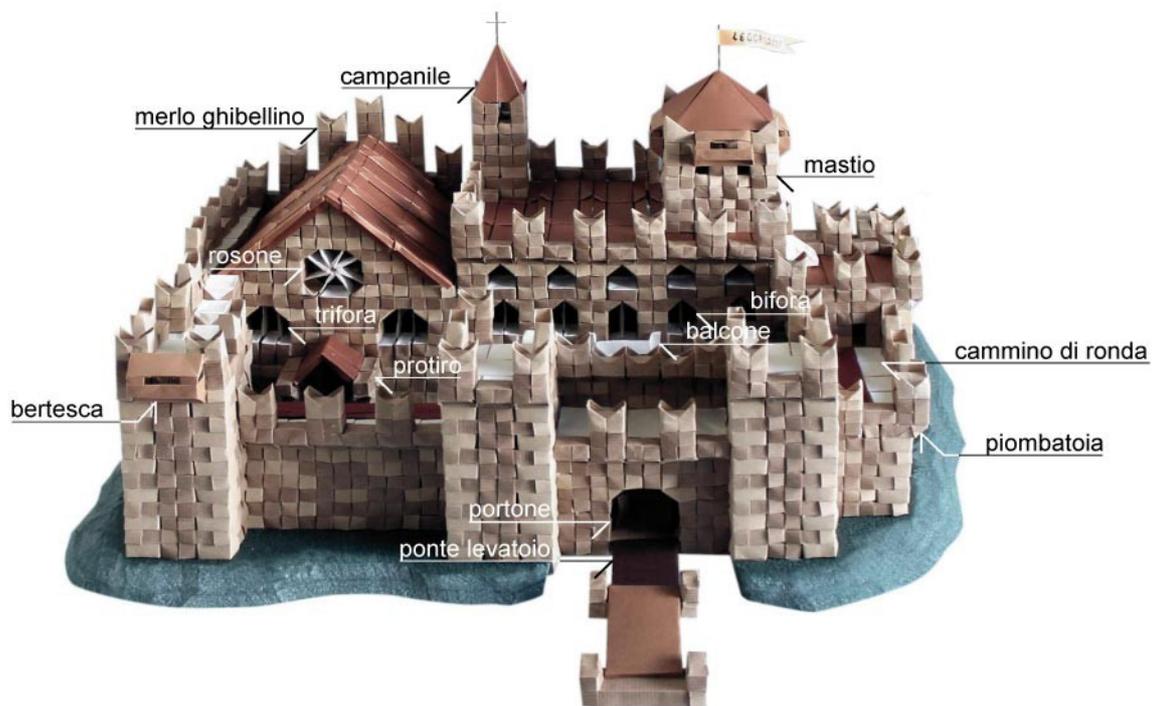


Prospetto Sud



Prospetto Sud-Ovest

WITH THE ADVICE OF THIS MANUAL IT IS POSSIBLE TO REALIZE, FOLDING SMALL SHEETS OF PAPER, VILLAS AND MODERN BUILDINGS, HOUSES, CHURCHES AND MEDIOEVAL CASTLES



Franco Pavarin

www.aereiemaschereorigami.altervista.org