SUPPLEMENTARY DATA

Supplementary Figure 1. Altered functional responses in motor and hindlimb areas are related specifically to forelimb cortex damage.

(A) IOS maps superimposed onto the brain’s surface of an animal where the photothrombotic stroke just missed the forelimb area (see dotted area anterior green FL region).

(B) Montage showing VSD responses after stimulation of the contralateral forelimb.

(C) Color coded line plots of cortical responses in forelimb, hindlimb and motor cortical areas (see boxes in A). Note that the spatiotemporal dynamics of VSD responses in motor and hindlimb cortical areas are similar to that of controls (see Fig. 3).
Supplementary Figure 2. Photomicrographs of matched coronal sections illustrating changes in CtB immunolabelling in controls and after stroke (>8wk).

(A) Labelling of axonal projections to the ipsilateral striatum after microinjection of CtB in motor (or peri-infarct) cortex. Note the higher density of CtB labelling in the striatum (CPu) of stroke recovered mice relative to controls.

(B) Another example showing the dramatic loss of cortical projections from primary and secondary somatosensory cortical regions to motor cortex after stroke.

(C) Shows increased CtB labelling in the retrosplenial cortex of stroke recovered mice.
Supplementary Figure 3. Absence of GFAP positive astrocytes in the cortex 4-5 weeks after open skull cranial window preparation.

(A) Positive control showing GFAP-positive astrocytes in the cortex of mice 7 days after inducing brain damage by acute stroke (no cranial window is present in this animal).

(B-E) Four different examples of GFAP staining in the right and left (control) hemisphere of mice that underwent the open skull cranial window preparation in the right hemisphere in the absence of stroke, but using the same immunocytochemistry protocol as panel A. Note the absence of GFAP-positive reactive astrocytes in either hemisphere.
Supplementary Movie 1. In a control urethane-anesthetized mouse, VSD responses were imaged in the right hemisphere before and after stimulation of the left forelimb with a single 5 ms tap. Data presented in the movie were generated from the average of 10 trials of stimulation and are presented as % dF/Fo. Each 10 ms frame represents the average of two 5 ms frames.

Supplementary Movie 2. VSD imaging of forelimb evoked responses (5ms tap of left paw) in the right hemisphere of a mouse that had recovered for 8 weeks after stroke (Note: this is a different mouse than that shown in Supplementary movie 1). Data presented in the movie were generated from the average of 20 trials of stimulation and are presented as % dF/Fo. Each 8ms frame represents the average of two 4ms frames.

Supplementary Movie 3. In a control mouse, we delivered a brief 5ms tap of the left forelimb and bilaterally imaged VSD responses. For reference purposes, we demarcated the hindlimb cortex using a red circle. Data presented in the movie were generated from the average 20 trials of stimulation and are presented as % dF/Fo. Each 15ms frame represents the average of three 5ms frames.

Supplementary Movie 4. Shows bilateral VSD responses to a single 5ms tap of the left forelimb in a mouse that was subjected to a small targeted stroke in the right forelimb cortex 8 weeks prior to imaging (Note: this is a different mouse than that shown in Supplementary movie 1). Hindlimb cortex is outlined by a red circle. Data presented in
the movie were generated from the average of 20 trials of stimulation and are presented as % dF/Fo. Each 15ms frame represents the average of three 5ms frames.